AMERICAN VOCATIONAL JOURNAL

VOLUME 22 • NO. 6 • JUNE, 1947

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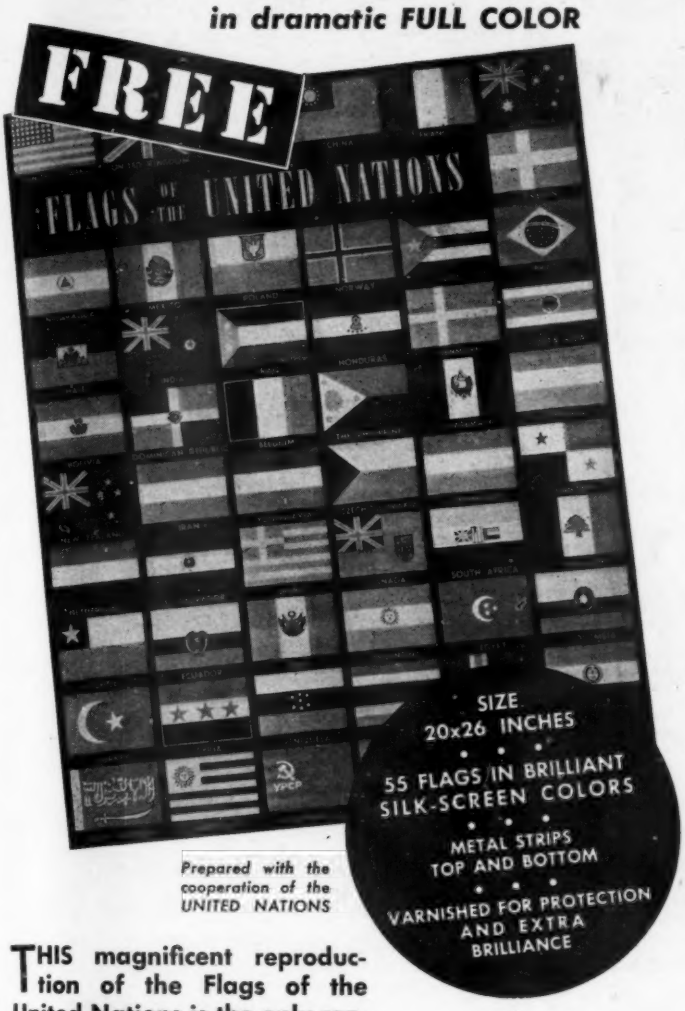

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The Cover

The oldest standing fortification in the United States is Fort Marion, originally the Castle of San Marco, in St. Augustine, Florida—oldest city in the nation. Pedro Menendez de Avilés sighted this Florida peninsula in 1565, landed there Sept. 6, and immediately began to fortify it. Fort Marion, built of coquina, was begun about 1638 and finished in 1756. The old arsenal was reconstructed in 1833 and now is state headquarters of the Florida National Guard. A wall and moat formerly ran across the peninsula at the northern edge of the city and the gate in this wall today is a picturesque ruin, but the Fort is well preserved. H.H.C.

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★

Interest Factors in Vocational Training

THE saying that people do best the things they like to do is another way of saying that one must be interested in any undertaking if he is to make a success of it. It is of great importance in any training program that the instructor be aware of and believe in this principle.

Webster defines interest as concern, mental excitement, a permanent capability of being interested and concerned. Note the word permanent. *Interest* means whatever makes a learner want to learn. Before a learner can be interested he must in some way be brought to the state of mind where he wants to learn. This puts a responsibility on the instructor at the outset. He must bring about this desirable state of mind; must be resourceful in developing or making use of ways and devices for arousing interest. There are few people in this world who have enough natural interest in anything to go right after it from the beginning. Hence an artificial interest must be created for many learners, and this synthetic interest must be nurtured steadily and patiently until it becomes as nearly like a natural interest as possible. It must become permanent.

Many instructors do not distinguish between interest and attention. The main differences seem to be in ease of arousing or attracting, and in permanency. Attention may be attracted suddenly, but it is likely to be short lived.

The successful teacher must know what several of the common interest factors are and then use all his resourcefulness to make best use of them. Important interest factors are: The realization on the part of the learner that the things he is about to learn are going to be helpful to him in accomplishing something which he very much wants to accomplish; the feeling that he can actually grasp what is being offered (confidence); curiosity; desire for praise—knowing he has done a good job and that the instructor will recognize that fact and tell him so. An unnatural interest can be aroused through fear of ridicule or fear of punishment. Competition for achievement among members of a group, possibly with a reward for this achievement, also may be a strong interest factor.

The big job of the instructor, then, is to familiarize himself with these and other interest factors and then develop and maintain the highest degree of interest possible. Undoubtedly *good teaching* is the most effective agent in the development of interest. The teacher must know his business and his subject if he is to foster confidence among his learners. Well-planned lessons in proper sequence; suitable and properly carried out demonstrations; fairness of judgment in all dealings with learners; commendation for good work; all these and additional good teaching practices must prevail if the teacher hopes to develop and maintain a satisfactory degree of interest in his students.

Trade skill, teaching skill, tact, sympathy, patience, fair dealing, resourcefulness, then, are the prime factors in good teaching and when coupled with a suitable environment and good management, tend to keep learning processes in motion.

Everett R. Miller
The William Hood Dunwoody Industrial Institute

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LEE HARRIS *University of Kentucky*

State Expects to Enroll 50,000; Now Engaged in Training Teachers

Farmer-Training of Veterans in Kentucky

APPROXIMATELY 9,000 veterans of World War II are enrolled in farmer-training programs in Kentucky; 331 assistant teachers of vocational agriculture are doing the training and the objective is to enable the veterans to make a living on the farm. Teachers of veterans serve as assistants to regular teachers of vocational agriculture.

Kentucky expects to enroll 50,000 veterans in its farmer-training program within the next 10 years. At present, 182 of the 233 departments of vocational agriculture in Kentucky are operating farmer-training programs for veterans. Six assistant state supervisors of agricultural education help administer the program which is made possible by the local boards of education in cooperation with the Division of Vocational Education, State Department of Education.

This Kentucky program started in January, 1946. A pre-service and in-service training program for teachers of veterans was developed by the teacher-training staff in agricultural education, College of Education, University of Kentucky. It was designed particularly for those who were to assist regular teachers of vocational agriculture.

Former teachers of vocational agriculture who had just returned from the Armed Services were the first to be employed and a three-day conference was held for these men. An intensive pre-service training course of two and one-half weeks has been held for all beginning teachers since that time.

Yearly classroom instruction must be for 200 hours at least

This farmer-veteran raised and sold 3,000 turkeys last year

As part of the in-service training program the assistant teachers are called together by districts one day each month for additional training. Methods of teaching, teaching materials, and current problems are discussed.

The teacher-training department at the Uuiversity of Kentucky has the responsibility of developing course outlines, reference materials, lesson plans, and other teaching aids. Course outlines are worked out for each year.

Plans have been made for training 250 teachers of veterans during the coming year. Minimum requirements for emergency certificates have been set up by the State Board af Education. An emergency certificate may be issued to persons who are 21 years old, have had three years of farm experience, have completed certain college requirements, and who will take a 12-week course set up especially for them. These prospective teachers are to be selected by the counties in need of teachers. An advisory committee, particularly the members representing agriculture, assist local school officials in selecting prospective teachers.

A Kentucky veteran's training is divided into two parts: Off-farm instruction which is received in the classroom, and on-farm training.

When a veteran operates his own farm, it must be large enough to require his full time, and must be of sufficient size and productivity to insure the veteran a satisfactory income after he has finished his training. Each veteran gets not less than 200 hours of systematic instruction in the classroom each year. The veteran also gets 50 hours of group instruction on the farm, such as treating tobacco plant beds with fermate and other demonstrations. He is instructed further during twice-a-month visits by the agriculture teacher who works with him on his farm.

If a veteran does not own his farm, he can rent a farm and become a renter-operator. He must still have a farming program of good size.

Many Kentucky veterans engaged in sheep production have asked to have part in the annual fat lamb shows and sales sponsored each year by the stockyards in Louisville, Lexington, and Evansville, Indiana. The request has been granted, and plans now are being made for veterans to participate in these events.

Civilian Aircraft Training

H. M. JELLISON
Executive Director,
Industrial and Vocational Education
Akron, Ohio

Civil Aeronautics Administration Regulations Met by Akron, Ohio

DEVELOPMENT of essential skills and techniques in aircraft personnel was necessary and was provided during the war, but no provision was made for the training needed to service and maintain civilian aircraft. Realizing this, the Akron Board of Education and administrative staff took the necessary steps to establish a school for training young men in aircraft and aircraft engine maintenance.

Through the educational aircraft disposal division of the War Assets Administration, and with the cooperation of the Ohio State Department of Education, division of trades and industries, the necessary equipment was procured and instruction provided to meet the requirements of the Civil Aeronautics Administration.

The Akron Board of Education provided housing and additional equipment. A 10-room school building adjacent to the Municipal Airport, with hangar space and newly constructed engine testhouse, furnished the 10,000 square feet of floor space required by the CAA.

The school now is offering three different curriculums: (1) the aircraft curriculum for training aircraft maintenance mechanics; (2) aircraft engine curriculum for training aircraft engine mechanics; (3) a combination aircraft and engine curriculum for training aircraft and aircraft engine maintenance mechanics.

The aircraft and engine curriculums have a minimum training period of not less than 960 hours of instruction in each subject, and are designed to be completed in not less than 20 weeks. These courses require an attendance of three hours per day in practical work and three hours in aircraft theory. The combination aircraft and engine curriculum has a minimum training period of not less than 1,650 hours of instruction and is designed to be completed in not less than 35 weeks. Much attention is given to related and theoretical work in the various curriculums. Classrooms have been carefully set up with illustrative and demonstrative material, a well-equipped technical library has been established, and a visual aids room with an extensive film service has been provided. In the regular day school classes, the completion of the 10th grade in high school is a prerequisite for admission. In addition, mechanical aptitude and physical tests are given to determine fitness for the training.

The school operates 30 hours per week, 6 hours per day, and 5 days per week for regularly enrolled students. Courses are offered to adults who have had some training and wish to take additional hours in order to meet requirements for certification, and to persons who want refresher courses in order to bring themselves up to date on new developments in aviation and new types of equipment now employed in civilian aircraft.

In order to meet Civil Aeronautics regulations, an individual record of each student is kept by the school. These record cards include a log of all instruction, attendance, subjects covered, examinations, and examination grades. All records are certified by the chief instructor.

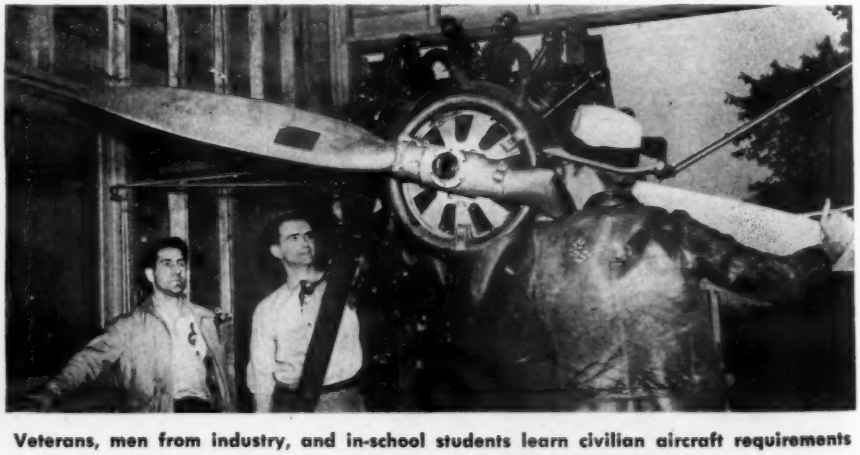
The school is staffed with capable, well-trained instructors, each holding an instructor's certificate and either an aircraft mechanic's certificate or the aircraft engine mechanic's certificate.

Civil Aeronautics inspectors periodically give examinations to those who have completed the required number of hours and wish to be certified as a licensed mechanic. Boys who do not wish to become licensed mechanics find other job opportunities in allied aircraft industries.

A modern aircraft must be in perfect condition before it leaves the ground. Training service mechanics in the proper techniques of servicing and maintaining aircraft is a most important factor in promoting safe air travel.

The Akron School of Aeronautics is a division of the Hower Vocational School and is the first in Ohio to receive the "A" and "E" license from the CAA. It was started in 1938 and became a training center for the Goodyear Aircraft Corp. employees during the war.

The school now has 80 high school age boys enrolled for the day school, 40 veterans who come at 3 p.m. some of whom are disabled, and a third group —men from industry and adults interested in an aeronautical career.



Veterans, men from industry, and in-school students learn civilian aircraft requirements

Production for the Junior Red Cross

ARCHIE P. NEVINS
Supervisor, Industrial Education
Kalamazoo Public Schools
Kalamazoo, Michigan

Quantity Output in School Shops and Humanitarian Purposes Served

SCHOOL shop teachers and industrial education people generally are showing growing interest in making articles in school shops by methods closely approaching the quantity production methods of industry. There are many educational values in this type of school project, both in industrial arts shops and in vocational and trade classes. Such a project calls for planning of a higher order than is required for an individually-produced project. Jigs and production fixtures must be planned and made to secure desirable results, and a division of work set up to provide for a smooth flow of material and operation. Where trade classes are conducted on the operational training basis, training is required in the kind of situations obtaining in the quantity production scheme of operation. Supervision and inspection procedures must be carried on by students as in industrial plants, and they are given a very good sample of industrial production methods.

Unfortunately for the school shop teacher, suitable production jobs are not found easily. Securing the necessary materials has been a problem; disposing of the articles without competing with the business of tax-paying patrons of the school also has interfered. For these and other reasons, shop teachers have not used quantity-production projects in their shop courses as extensively as they might have done. This is where the production program of the American Junior Red Cross brings the shop teacher and administrator the desired opportunity.

When properly presented to students and the need for the articles is made apparent, a motivating interest is present in the learning situation that makes for the most successful results. Students have the right to feel that they are an important part of the community and that they have important contributions to make to its present and future welfare. Teachers who are able to arouse this realization on the part of students and so provide a medium by which the desire to serve can be made effective, are those who develop the skill and ability of students and provide the broader outlook and sense of civic responsibility that are the goals of all superior teachers.

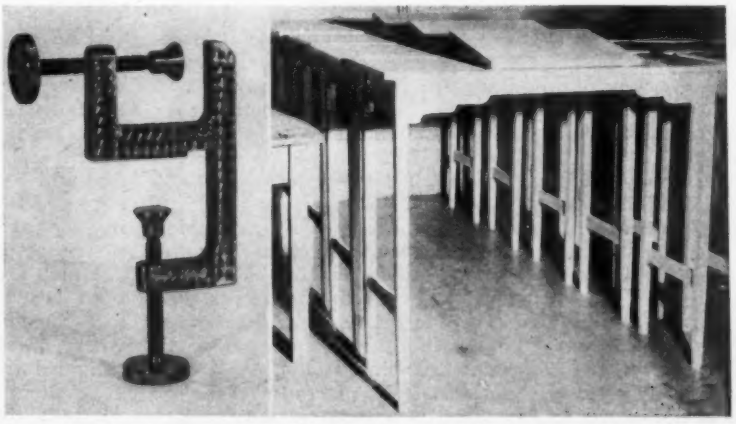
The need for production of articles for the Armed Forces has almost ended, but veterans in Army, Navy, and other government hospitals, children's hospitals, and the thousands of unfortunate children among the war-made wreckage overseas, still have unmet needs. The school can provide such service to others through the American Junior Red Cross, and they lend themselves to the needs of school groups for training in production methods. The Junior Red Cross has many drawings and designs for articles that are useful in their work of relieving human misery. They range from simple projects that can be made by elementary school children to those that provide a challenge to students in vocational classes. Teachers are encouraged to select those which fit into the training plan of their classes and which contribute to the educational objective. Schools are encouraged to design and make articles required locally.

For example, the Kalamazoo Central High School wood shop classes made one lot of "over-the-bed" tables when it was discovered that the Army's nearby Percy Jones General Hospital needed a bedside vise or craftwork clamp. Veterans who had lost one hand or arm wanted to do craftwork presented by the Red Cross Arts and Skills Corps, but were unable to participate in this activity because of their inability to hold their work. The bedside vise illustrated here was designed. Production in the school machine shop as a project involved contour sawing, file finishing, turning between centers, thread cutting, turning short taper, ball turning, knurling, tapping, and assembling. The need for the vises was carefully presented to the students and their interest aroused and maintained throughout the project. Six dozen vises were made and put into use by wounded veterans. More will be produced, because it is an excellent vehicle for teaching objectives of the course as well as serving a very real purpose in the community.

Another advantage of using Red Cross projects is that the cost of the material is borne by the Junior Red Cross Service Fund—a very real advantage to schools in these days of high cost of materials and of restricted supply budgets.

In selecting an article for production for the Junior Red Cross, it is the responsibility of the shop teacher

(Continued on page 41)



Vises and bedside tables made in shop classes for Army Hospital craftwork

PART II

Professional Education for Home Safety

HOME SAFETY

MATTIE PATTISON
Associate Professor
Home Economics Education
Iowa State College
and
GLADYS T. OLSON
Itinerant Teacher Trainer
Iowa State College

HOW concerned are you about the accident rate in American homes? All who are responsible for preparation of teachers should be concerned. They have opportunities to reduce that rate through education of home economics students.

In a previous article the importance of a hazard-free environment was emphasized. In this article, professional education for home safety is discussed. Even though this article is addressed to those responsible for the professional preparation of teachers, the suggestions which follow could be used when an effort is being made to revise the technical courses in colleges.

If prospective teachers came to professional courses with necessary information, habits, and attitudes about safety, the problem of learning to teach safety would be simple. At the present time, however, many prospective teachers seem to be inadequately prepared in several aspects of safety education. One of the most obvious is a lack of safety knowledge.

There is no reason to be without recent authoritative information because it is always available from the National Safety Council in Chicago. Their statistics give the total number of deaths and injuries from home accidents for each year. Data are classified as to type and age of persons injured. The number and per cent of home deaths by falls, burns, and other causes are given.

Teachers of home economics should learn to help students gain some general ideas from data and how to use these ideas in solving problems. Research has shown that the ability to organize facts is somewhat different from the ability to use facts and generalizations in the solution of new problems.

From accident statistics it is easy to learn that the greatest mechanical cause of home accidents is disorder. Teachers can use this fact so that the experiences provided for pupils result in better habits of planning and work.

If teacher trainers can use these easily-available data about home accidents to show teachers how to draw implications from statistics, the ability to generalize can be developed at the very time students are impressed by the importance of safety education. Some examples from the area of housing, equipment, and furnishings will illustrate this point.

Equipment and supplies left in places where one does not expect to find them contribute to many home accidents.

Adequate storage space will encourage picking up and returning articles to their proper places.

Simplified home furnishings will contribute to order in the home.

Furniture arranged to allow free passage through the room will be easier to keep in place.

A plan of work helps avoid hurry and disorder.

Even when students can generalize information, safety education may be an intellectual rather than a personal problem. General statistics are very cold and impersonal. They do not include, and probably should not or could not include, the conditions surrounding each case which might arouse emotions to the point of concern about home accidents. Accounts of situations which will give these necessary details can be provided by case studies.

Facts are most real and revealing when they are related to local cases. Information about specific accidents can be secured through students, local or state safety education committees, and newspapers. One grim fact is usually true that the closer an accident has been to you, the more careful you are to resist providing another accident statistic.

Students should have the experience of selecting facts about a situation that make a good case study. Safety is one area in which it is possible to get enough detail for a good case study because accidents provide good items for newspapers and gossip.

The ability to use a case situation effectively can well be taught in the area of safety because the material for case situations and also statistics for the country as a whole are readily at hand. Thus the limitations of case studies as well as their values can be demonstrated.

At the time the student is using case situations, her interest in safety education probably will be increased. She will be more aware of two things: "accidents can happen to me"; and that accidents may cause suffering, loss of time, inefficiency in work, and needless expenditure of money.

When the concern of the prospective teacher has been aroused she will accept responsibility for the safety of pupils in the classroom and teach to the point where pupils are willing and able to take increasing responsibility for themselves.

Teachers who have accepted this responsibility do not take chances. Since one can never be absolutely sure of what people will do or the condition of the

equipment, he should always use procedures which will minimize the possibility of accidents caused by the failure of other persons or equipment. An example is desirable procedure for a student lighting a gas oven which is used by other groups. Each step should be carried out quickly, but consciously:

Check for odor of escaping gas. Check whether person who used oven last turned cock off completely. Open oven door before lighting match. Touch lighted match to burner before gas is allowed to escape.

Safety is so important that when the student teacher or teacher-in-service does not use correct methods of work, the supervisor or supervising teacher should take time to see that safe methods are used. In addition to recognizing safe methods of work, the teacher should recognize other hazards in the situation and be unwilling to proceed when there is danger of being distracted, in a hurry, or too fatigued. Any one of these may cause a student to act unsafely especially until skills have become habitual.

Many teachers have not been happy about either the extent or quality of performance resulting from school instruction. The teachers themselves recognize that correct methods of work can be taught at school but that pupils must practice skills outside of class to gain proficiency. Unless motivation for using safe methods of work is a part of teaching each skill, learning probably will not carry over to situations outside the classroom. Students must be highly motivated if they are to think that new habits of work are worth the effort in situations where there are more distractions than in school laboratories.

Motivation for safe living may be provided whenever resources of the individual or family are studied. After plans have been made for effective use of money and time to provide the goods and services needed for a family, students might well make the revisions necessary if (1) income is cut off by accident to the father, or (2) time and ability for household tasks have been greatly reduced because of an accident to the mother. Thus students will recognize how accidents can affect the resources of a family.

Teachers need to recognize that family living is complex; that many factors effect quality of living in the home. Safety, like relationships and consumer education, is one aspect of most family situations and can be used to illustrate the interrelationship of various factors in a situation. In other words, safety should be taught as an integral part of many aspects of homemaking. A few illustrations will clarify this point.

Relationships among family members are affected by accidents. If the accident is minor, the least result probably is an irritable disposition; if the accident is major, the family circle may be broken up temporarily by hospitalization or permanently by death. Consequences of accidents vary between these extremes, affecting even the most stable of families.

Children, as family members, can be made conscious of safety at an early age. Often the development of a feeling of responsibility for the care of his own possessions is the major goal for teaching a child to pick up his toys. Another type of development which could be secured at the same time is consideration for the health and comfort of others. The child who recognizes that the safety of his grandmother is endangered when he leaves toys on the floor shows social growth beyond simple concern for himself. Publications from the National Safety Council that may be helpful are three pamphlets, *Congratulations, Truly Yours,* and *You're in Charge.*

Clothing, in an area of home economics where safety education may seem irrelevant, has some very important contributions to make to safe living. Selecting clothing of suitable design for jobs in the home is as important as in industry.

Dresses which restrict free movement or which have decorations extending beyond construction lines are hazardous for many home activities. The appeal of styles that are becoming is so great that possible consequences of wearing unsafe clothing needs to be emphasized. Most communities can provide case studies of persons who have caught ties or cuffs in the moving parts of household machines. Suggestions for teaching safe clothing are given in *Design Tomorrow's Clothes Today* and *Safer Home Living* from the National Safety Council.

Removal of hazards in design of houses is as important as any other planning for the well-being of the family. All too often houses are more convenient, sanitary, and comfortable than they are hazard-free. A publication of the National Safety Council, *When You*

(Continued on page 27)

Drawings Courtesy National Safety Council, Chicago, Ill.

BENJAMIN C. WILLIS
Superintendent of Schools
Hagerstown, Maryland

Community

First place winners at Boonsboro, Md., Farm Products Show

ONE important task of the administration of any school is establishment of cordial and helpful relationships within the community. The schools represented by the following reports have achieved a remarkable degree of success in their community relationships. No department in the high schools of this school system has been more effective in this respect than has the vocational agriculture department.

The Rotary Club (110 members) of Hagerstown, Maryland (population 40,000) requested the board of education to present a program to interpret vocational agriculture to its members. Teachers of vocational agriculture in their respective schools decided upon five areas to be covered. Presentation of each of the four-minute talks which are given in brief here, entailed a historical review of accomplishments, a rechecking of objectives, and raising of sites previously set. Classes cooperated in preparing the material and by vote decided who should make the presentations. The English department assisted with the oral work. Each of the 10 departments of vocational agriculture were represented by two boys and their teachers at the meeting. The five presentations follow.

THE Hagerstown, Maryland, vocational agriculture department is located at Vocational Center. Boys spend 60 per cent of the school day in regular classes at the senior high school or one of the junior high schools, and are transported to the Vocational Center for the rest of the day for work in agriculture.

At the Vocational Center there is the main building with two floors, and a shop in the basement and another upstairs. Classrooms adjoin the shops. All tools in the two toolrooms are arranged so they can be found quickly. At the blacksmith shop the boys weld and repair all kinds of machinery. There are two garages which are used for farrowing pens for the purebred sows.

Last year farm management and layout were studied and two boys were assigned to organize the school farm which consists of 12 acres owned by the Board of Education and adjacent land owned by the city, which is farmed on a share-crop basis. The poorest land was fenced off for feeding lots and used in swine production. All suitable land was planted into crops. Four hybrid corn varieties were planted for the Farm Bureau, and tomatoes for the Greencastle Packing Co. This year tomatoes, potatoes, corn, barley, and grass crops will be planted, all crop land to be laid out with the aid of the Washington County Soil Conservation Department, so it may be classified as a typical soil conservation demonstration. Equipment includes a fully-equipped Farmall "A" tractor and other machinery which was purchased second-hand and repaired in the shops.

Three hog houses and a number of pens have been constructed for the three breeding sows and 18 fat hogs which are being used to develop a breeding program and for conducting feeding programs. Agriculture students who live in town and do not have an opportunity to carry home practice programs work here before and after school.

Plans call for constructing a small barn, a poultry house, a place for beef and sheep enterprises, and for a 100 laying-hen project.

Financial outlay the first year of operating at the farm shop was $338.75, not including cost of equipment. Income was $759, leaving a profit of $420.25. Profits will be used to increase livestock and crop activities.

The purposes of the program are (1) to supplement and enlarge the supervised farming program; (2) to provide students with a place to store seed, feed, and equipment; (3) to provide visual material for instruction and observation in all-day classes as well as for field day programs; (4) to provide a means for individual and group cooperative efforts in producing, processing, conserving, and marketing farm commodities; (5) to enlarge the possibilities for a sound program in the care, repair, and operation of farm machinery; (6) to make it possible for more effective and timely supervision of jobs requiring close timing, which is difficult under home conditions.—*Marvin E. Hollinger, Senior, Hagerstown High School, Maryland.*

OWNERSHIP makes a boy realize what an investment is and what keeping records of his livestock means. Boys owning projects must have goals and in attempting to reach them they apply their father's ideas and their own learning from agricultural work at school.

Some of these projects deal with raising hogs. When hog production is not as great as desired, classroom study and discussion help toward solutions.

In recent hog shows, practically all winning hogs have come from improved breeding stock. There are gilts that have farrowed eight to 10 pigs per litter compared to six per litter on the average farm.

Hagerstown, Maryland, Gives Rotary Club Picture of Work in Vocational Agriculture

Relationships

Boys in vocational agriculture have prepared charts showing the feed cost as compared with return above feed costs at various levels of butterfat production. They show that cost of feed remains nearly the same while there is a great difference in profits. A cow producing 150 lbs. of butterfat in a year returned only $34 above feed cost while a cow producing 250 lbs. returned $103 above feed cost.

Applying these principles to their farming program, the Clear Spring boys have more than $800 invested in poultry, $4,300 in hogs, $3,290 in dairy cattle, $1,280 in beef, and $335 in sheep. The total value of these projects is in excess of $10,000. Pure bred hogs, calves, ewes, and blood-tested chicks have been purchased in developing this farming program. If farm prices drop as some predict they will, the increased production per animal should meet this drop.—*John Seibert, Clear Spring High School, Maryland.*

TOWARD the close of World War II, when the meat and poultry shortage was most critical, a representative of the U. S. Chamber of Commerce discovered that Boonsboro vocational agriculture students were growing broiler chicks as a project and some were ready for sale. He had a number dressed and packed on ice to take home to Washington. He had learned also that turkeys, ducks, and capons were being raised by FFA students. When this information reached other Chamber of Commerce employees, a business started. Poultry was sold to them at ceiling prices plus a small charge for dressing the fowl. The first order was delivered during the Thanksgiving holiday in 1944. Since then a total of 1,301 dressed fowl have been sold for $5,119.71.

The money, which came into Washington County from outside Maryland, was all used to increase the wealth of the community. Students have not only improved their financial condition but have improved their personalities, made new friends, increased their knowledge of poultry raising, and have not missed school time.—*Leo Mullendore, Boonsboro High School, Maryland.*

SINCE the inception of vocational agriculture in Washington county, FFA chapters have been active in each high school. Studying about new and improved methods is not enough; FFA members put them into practice, and projects constitute one of the most important parts of the work.

The hog project is a good example. The Hagerstown Rotary Club advanced the money to purchase a purebed boar, and so start swine production. Marketing was solved through the fat hog shows and sales of the Four States Live Stock Association and the Baltimore Live Stock Market. Boys manage and conduct these sales.

Records of the four local shows and sales indicate part of the achievements to date: 83 boys exhibited and sold 377 hogs, total weight 83,460 lbs., receipts $15,827.11. Included were four grand champions and four reserve champions and 48 prices were received for these sales, or $667.34.

In addition to the experience and financial success, the FFA shows are making Washington County recognized as a leading county in high-quality swine production.—*Robert Cearfoss, Hagerstown High School, Maryland.*

I ENTERED high school in 1935, and in addition to vocational agriculture I studied English, history, mathematics, chemistry, physics, and music. I was graduated in June, 1939, and worked for my father on the farm, buying my horse and several heifers.

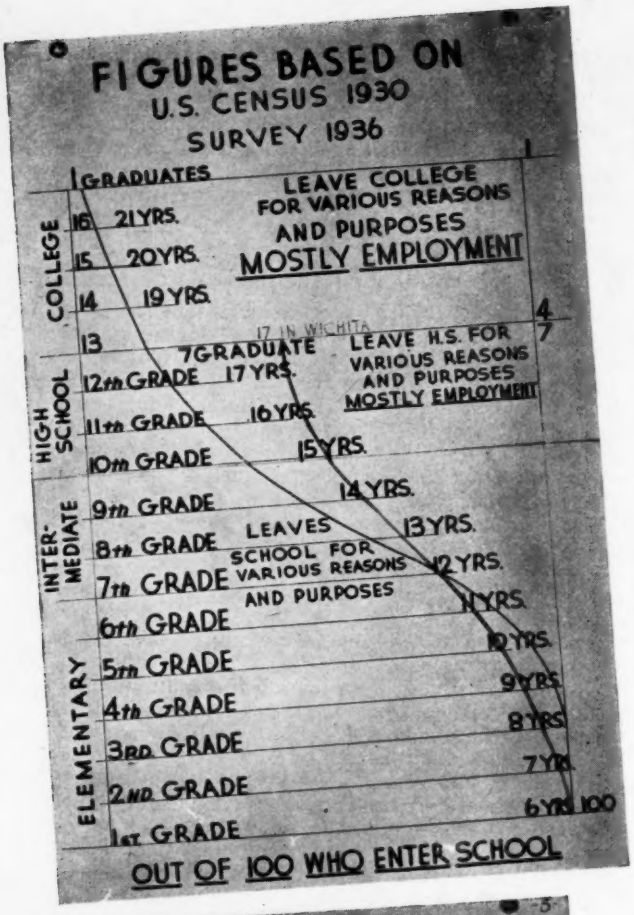
In the fall of 1943 I was married and the following spring I rented the farm that my father had rented for 23 years. I raise corn, wheat, barley, and hay; have 22 head of cattle including 15 milk cows. These cows are milked with electric milkers which I bought last fall to relieve the labor shortage.

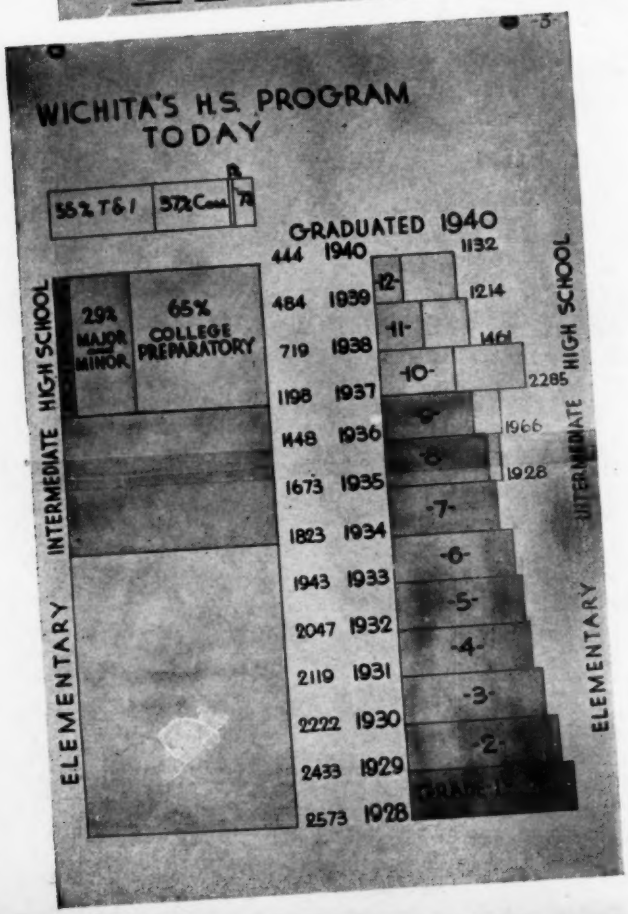
In all of this work my education was of great value. I was taught how to prepare the seed bed and to select the best fertilizer; also the right feed for my cattle.

Three of the topics I studied in school have served me well financially—repair of farm machinery, rope work, and electricity. When something breaks I can fix it in my own work shop. When my hay rope broke last summer, I spliced it on the job and continued unloading hay. When I could not get an electrician to wire my brooder house, I did it myself, in addition to installing floor outlets in my house.

Every boy who wants to be a farmer will profit if he learns better farming methods in school. My high school education also qualified me better for the offices of assistant superintendent in the Sunday school and secretary of my local Farm Bureau.—*Ellsworth Reeder, Boonsboro High School Graduate, Maryland.*

Agriculture teacher and student producer of this prize hog





Plan Your Promotion Program

IN promoting an expanded program of industrial education for Wichita Public Schools, some preliminary foundation work had to be accomplished. First, the sympathetic ear of the superintendent of schools was needed; then the administrative staff had to be thoroughly convinced there were sound reasons for expansion; then facts and figures had to be presented and explained to the board of education.

For this important part of the program, a set of six well-designed and thought-out charts was prepared, which showed the conditions of the present school system, and the proposed expanded program and ways in which it could be accomplished.

To help acquaint the board with the financial status of the community, one chart gave figures on the war production training program, showing that although 16 privately owned and operated schools came into existence offering parallel training programs during the war period in Wichita, the public schools trained approximately 33,000 at a cost of $43.01 per trainee. During that time the private schools were charging tuition of not less than $150—many of them $250—per trainee. Thus more than $3,000,000 was saved the community, which was more than enough to build a new high school.

Another chart was developed from statistics furnished by the U. S. Office of Education, based on the 1930 census, showing that out of every 100 youngsters who entered the first grade over the nation, only seven graduate from high school, only four go on to college, and only one graduates. A survey of the Wichita schools showed that 17 graduate from high school. Although this figure is much better than the national average, it still made Wichita feel uncomfortable, since not more than 17 per cent were being served through the high school program.

Analyzing the labor market in Wichita, it was found that 55 per cent of those gainfully employed were in trade and industrial occupations, 37 per cent were in the commercial and distribution field, less than 1 per cent were in agriculture, and less than 7 per cent were in the professions. Analyzing the high school offerings, it was found that 65 per cent of those in high school were taking college preparatory courses, 29 per cent were taking major-and-minor courses, and less than 6 per cent were taking vocational subjects. Also, from the best judgment of the registrars, it was estimated that less than 27 per cent of those who graduate from high school go on to college, although this figure could not be completely accurate.

Chart No. 4 showed that Wichita's population had more than doubled during the war period. Although during the 1930's the population had remained static, it was now evident that high school enrollment for postwar normalcy would be advanced at least by 1,800. The chart also showed that the present general high

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Director, Department of
Industrial and Adult Education
Wichita, Kansas

Wichita, Kansas, Used Series of Charts; Funds Earmarked for New Vocational School

schools could not possibly accommodate even as many as they have had in the past without greatly affecting the efficiency of the program—evidence that a new high school must be provided.

The next problem was to convince the board of education and administration that if another high school was to be built, it should be a vocational-technical high school which would offer practical preparation for work, or foundation education in engineering or technical subjects. It was further brought out on Chart No. 5 that by extending a guidance program from the first grade through the entire school system (with exploratory and tryout courses for both boys and girls in the intermediate or junior high school), that the counseling, guidance, and testing could provide even more adequately a college preparatory course for the 20 per cent of the high school students who should go on to college. Also, highly specialized vocational courses in trade and industrial education, office practice, distributive education, homemaking, technical, and the service trades could be provided for at least 30 per cent. This would leave 50 per cent in a general high school educational program in which functional industrial arts, commerce, and homemaking would be offered with life adjustment emphasis for all the students in this group.

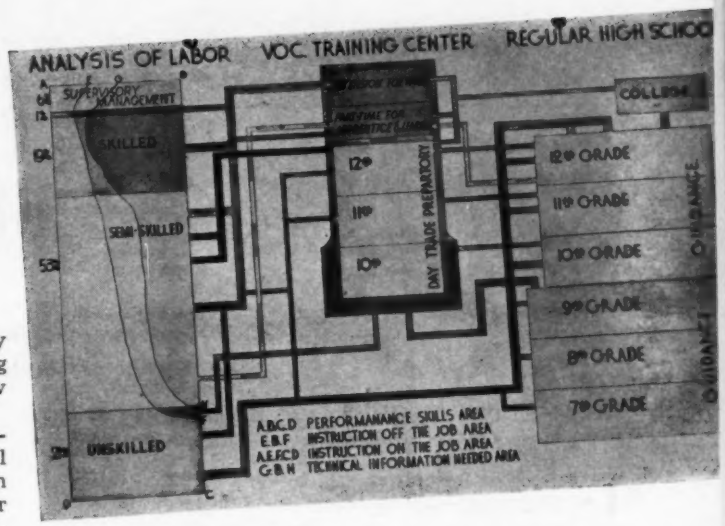
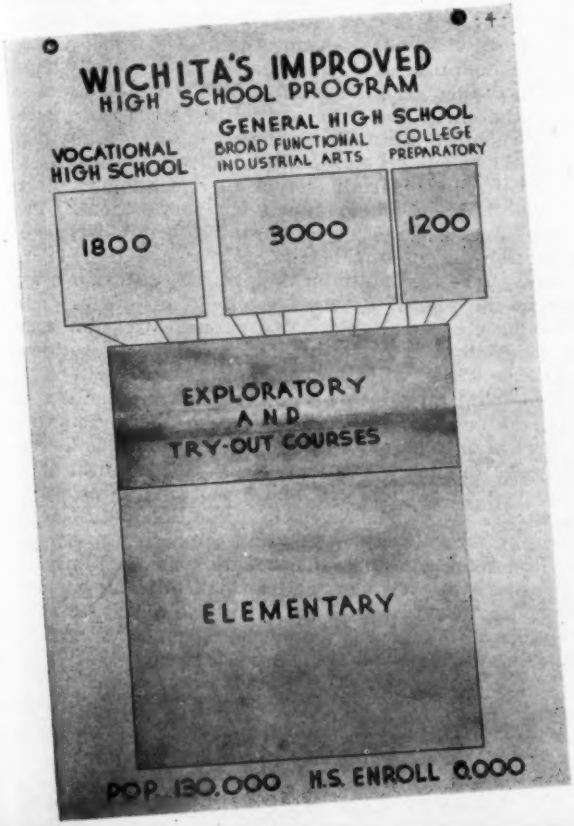


Chart No. 6 was a student flow chart in which the relationship of the general academic high school to the vocational technical training center was depicted, with an analysis of the labor market of the U. S. showing the divisions of the market for which most training was needed and the division for which vocational and technical training could be given better in school than out of school.

The test of whether or not a promotional program has been well thought out and presented is in the results obtained.

Last August the Wichita voters, by a vote of five to two, approved bonds for more than $5,500,000, with $2,750,000 ear-marked for a new vocational-technical high school.



M. Norcross Stratton

M. NORCROSS STRATTON
State Director of Vocational Education
Massachusetts

The 60 Per Cent Group

*Excellent Guidance and Counseling Service Essential to This Program**

THE Prosser Resolution which was presented in 1945 in Washington by Dr. Charles A. Prosser, and subsequently adopted by the delegates at the meeting of the consulting committee on "Vocational Education in the Years Ahead," reads as follows:

"It is the belief of this conference that with the aid of this report in final form, the vocational school of a community will be better able to prepare 20 per cent of its youth of secondary school age for entrance upon skilled occupations, and that the high school will continue to prepare 20 per cent of its students for entrance to college. We do not believe that the remaining 60 per cent of school youth of secondary school age will receive the life adjustment training they need and to which they are entitled as American citizens, unless and until the administrators of public education, with the assistance of the vocational education leaders, formulate a similar program for this group. We, therefore, request that the United States Commissioner of Education and the Assistant Commissioner for Vocational Education call at some early date a conference or series of regional conferences between an equal number of representatives of general education and of vocational education—to consider this problem and to take such steps as may be found advisable for its solution."

This is not a new idea. The figures may vary in different communities but by and large they represent the average situation in average cities and towns in the country. The resolution may be interpreted in two ways. First, the consideration of three recognizable groups in the secondary school as to whether or not the various percentages of pupils are being served by vocational education, by college preparatory courses, or are not being adequately served in the 60 per cent category. Second, the consideration of the percentages based upon the proportions of persons gainfully employed, as (1) the proportion of gainfully employed who are engaged in skilled operations which require fairly extensive periods of specific training which is probably not more than 20 per cent. (The vocational schools are designed to serve this group.); (2) the proportion of the gainfully employed who are engaged in professional and technical occupations which require extensive periods of post-high school education and which, according to census figures, approaches 20 per cent. (The college preparatory courses in high schools are set up to serve this group.); (3) the majority of those gainfully employed who earn their livelihoods in occupational pursuits for which extensive periods of specific education are not prerequisite.

This is the 60 per cent group. For this group little training has been provided. Included are those whose parents insist upon a general high school diploma, the social-minded educational caste group; the number whose fathers, disregarding their children's aptitudes or abilities, say: "I worked in overalls but my son will work in a white collar." They are the group which includes those who have been misplaced in the college preparatory course and later, because of difficulties, transferred to the 60 per cent category. They are the object-minded group who learn best by doing, those who do not respond to the abstract approach to academic subjects. In some cases they are disciplinary problems, the dreamers and the boys and girls with high intelligence but lazy-minded. They are those unfortunates, too, who have no objective for the future, the "can't make up my mind" class, and so on.

The need for serving this group for employment in the 60 per cent fields of jobs is no new thing. It was recognized when the junior high school movement was at its crest. If junior high schools had carried on as they were originally planned, more headway might have been made on this problem. They must "be sold" on their own philosophy.

The problem is recognized by educators in such books as *Education for All American Youth*, the *Harvard Report*, *Vocational Education in the Years Ahead*, and *What the Schools Ought to Teach*. New educational activities have been established such as the inter-school programs, the area schools, general shops, the diversified occupation programs, and the continuation school. All are concerned with this area of youth.

It was often said: "When the compulsory school age is raised and these continuation school youth will remain in school, a similar type of education must be provided for them to effectively serve them." The school age was raised, but has the "similar type of education" been provided?

One of the first faults in the present education setup lies in the almost universal lack of an efficient and effective vocational guidance program. Attention must be directed to working on a program for vocational guidance which will function.

Too many guidance people confine their efforts to advising boys to drop Latin and take up mathematics if they plan to go to "Tech," or to drop household arts and take English if they expect to attend Smith, or to drop college preparatory and try a civics course to prepare for good citizenship and life adjustment. Training for good citizenship and the ability to earn a livelihood in some useful occupation are certainly in the same category but require a definite training if students are expected to go forth with ability to earn a livlihood. Functional vocational guidance with more emphasis on the vocational, is needed.

Two essential things are necessary for setting up a functional guidance program. First, a corps of carefully selected and well-trained persons. No one should

(Continued on page 27)

*Condensed from speech delivered at the 29th annual convention of the New Jersey Vocational Arts Association.

Instructional Materials Available

U. S. Office of Education, State and Local School Systems have Bulletins, Outlines, Etc.

EDITOR'S NOTE: A joint committee on related instructional materials has been at work during the past few months, preparing a list of instructional materials for the supplementary training of apprentices and other on-the-job trainees, which is available from state and local sources, and from the U. S. Office of Education.

Arthur B. Wrigley, state supervisor of trade and industrial education in New Jersey, has been chairman of this committee and C. F. Klinefelter, consultant in trade and industrial education, U. S. Office of Education, has for a time worked in full-time capacity with the group and has acted as secretary. Organizations participating have been the National Association of State Supervisors of Trade and Industrial Education, National Association of Industrial Teacher Trainers, National Council of Local Administrators of Vocational Education and Practical Arts, National Association of State Directors of Vocational Education, and the U. S. Office of Education. Conferences also have been held with representatives of the Retraining and Reemployment Administration and of the Chief State School Officers, to learn the need for, and ways of obtaining, instructional materials for on-the-job training of both veterans and non-veterans.

A list now has been prepared of the material which is available, and which need not be duplicated by states which have use for such instructional aids.

While most of the material is in the field of trade and industrial education, there are some distributive education publications on the list which is given here. It has been prepared by states, with general information as to prices and content. *G.H.F.*

ALABAMA: Progression Charts and Study Guides for use in the diversified occupations training program, and also useful in the part-time program, cover only the technical instruction relating to the occupations. They are designed for use by the individual student and teacher and contain (1) directions for use of the material; (2) student daily record in terms of work and study assignments; (3) a list of type jobs found in the occupation, with spaces for performance record; (4) a bibliography; (5) a progression record covering the performance and instruction assignments for each type job, including related study assignments keyed to the references, and a list of questions for guidance of students.

These publications are available from the Department of Trade and Industrial Education, University of Alabama, University, Ala., at prices ranging from .50 to $1.00 each. The list follows:

Auto Body and Fender Repair; Auto Electric Repair Shop Management; Auto Mechanics; Auto Parts Management (Rev. Ed.); Banking; Barbering; Bottling Plant Management; Bottling Plant Management—Answers; Cabinetmaking; Carpentry; Cosmetology; Creamery Management; Dental Assistant; Domestic Refrigeration; Drug Store Management; Dry Cleaning; Dry Goods and Notions; Electric Lineman; Fitting and Selling Shoes; Fitting and Selling Shoes—Answers; Floriculture; Furniture Store Management; Foundry Practice; Furniture Upholstery; Gas and Electric Welding; Grocery Store Management; House Wiring; Industrial Wiring; Insurance Agency Management; Laboratory Technician; Law Stenographer; Lumber Grading; Machine Shop Practice; Making and Selling Neon Signs; Meat Cutting; Meat Market Management; Meat Packing Plant Management; Medical Stenographer; Monumental Stone Cutting; Mortician; Movie Projector Operator; News Reporting; Office Assistant; Optical Mechanics; Painting and Decorating; Photography; Plumbing; Practical Poultry specialist; pre-Nursing; Printing; Radio Service; Recapping, Retreading ,and Tube Repairing; Restaurant Management; Selling Life Insurance; Service Station Management; Sheet Metal Work (Rev. Ed.); Sheet Metal Work—Answers; Shoe Repairing; Store Management; Store Salesmanship; Surveying; Textiles; Theater Management; Tractor Mechanics; Variety Store Work; Watch Repair; Wholesale Drug Selling.

Instructional bulletins also have been published which are organized in a manner similar to that of the occupational progression charts and study guides and are obtainable from the same source as follows:

Advertising; Buying; Display; Keeping Stock and Selling; Receiving; Checking, Marking Stock; Receiving, Checking, Marking Stock, Supplement to; Grocery Selling Information; Man Made Fibers; Outline on Store Selling; Study of Textiles; Study of Retail Arithmetic; Study of Fashion; Introductory Study to Retailing.

With the exception of *Outline on Store Selling* which is .75 and *Man Made Fibers*, .50, all of these bulletins are .25.

Outlines also have been prepared for training in a number of occupations of the Alabama State Highway Department and the Alabama Power Co. For information, address E. R. Plowden, state supervisor, trade and industrial education, State Department of Education, Montgomery, Ala.

California: Workbooks, testbooks, and final examinations for teacher and apprentice use, are available. Each course is planned for four years' duration, with related instruction for each year in a separate book. Books for each occupation are issued in three parts for each year of the apprentice course, the workbook, the testbook and final examination booklet. Orders should be addressed to the Division of Textbooks and Publications, California State Department of Education, Sacramento. The following are available:

Courses in Auto Mechanics, First Year—Chassis and Brakes; Tests to Accompany Course in Auto Mechanics, First Year; Final Examination Booklet for Auto Mechanics; Course in Carpentry, First Year—Foundations and Framing; Tests to Accompany Course in Carpentry, First Year; Final Examination Booklet for Carpentry.

The course and tests are .50 each and the final examinations are .10 each. Similar courses for both auto mechanics and carpentry are now in preparation for the following three years and additional trades for which books are in preparation are machinist, sheet metal worker, plumber, electrical wireman, electrical motor repairman, radio repairman, meat cutter, mill cabinet worker.

Course of study outlines include the instructional divisions and topics as well as books and pamphlets required for each apprentice and reference materials and films. Three copies will be sent free to state supervisors of trade and industrial education, upon request to Miles H. Anderson, assistant state supervisor, instructional materials laboratory, 2129 Grove St., Oakland, Cal. (on official stationery). The following are available:

An Outline of a Course of Study in the Related Information of the Automotive Maintenance and Repair Occupations; of the Carpentry Occupations; of the Machinist Trade; of the Painting and Decorating Occupation; Course (Outline) for Apprentices in the Plumbing and Pipefitting Industry; Related Information Course of Study for Apprentices in the Sheet Metal Trade (1st and 2nd years only; 3rd and 4th years available soon); A Topical Outline of the Trade Technical Information for the Tool and Diemaking Occupation.

Indiana: Apprentice related instruction bulletins are manuals of suggested procedures for use of administrators, supervisors, and teachers. Each contains a general outline and a specific breakdown of manual operations; a breakdown of related instruction covering each of the major subdivisions of the trade; a suggested program of related subjects for each year of apprenticeship and a content description of each subject keyed to specific texts, references, and visual aids; tool list for beginning apprentices, as follows:

Machinist Apprentice Related Instruction; Toolmaker Apprentice Related Instruction; Millwright Appprentice Related Instruction; Tool Designer Apprentice Related Instruction.

In preparation are bulletins on electrical maintenance mechanic, draftsman, auto mechanic, carpenter, plumber, painter and decorator, bricklayer, electrical construction worker, patternmaker, plasterer, and sheet metal worker.

Single copies are available without charge, if requested on school stationery from H. G. McComb, state supervisor of trade and industrial education, State House, Indianapolis, Ind.

Michigan: Socio-Economic Problems of Importance and Interest to Workers, by Wesley B. Sibley and Frank W. Dalton, University of Michigan Vocational Education Department, is available for $2.00 or for orders of more than 10 copies, $1.50 each.

Missouri: Course outlines for diversified occupations, for teacher and student use, include (1) suggestions for the coordinator, (2) books for study and reference, (3) opportunities in and requirements of the occupation, (4) directions for using the material, and (5) a chart covering what the worker does in each division (or block) of the occupation, with coordinated information on what he should learn in school. They were prepared for high school classes but should be helpful to those receiving related training on a part-time basis. Those available follow:

Auto Mechanics; Baking; Butchering; Carpentry; Cleaning and Pressing; Cosmetology; Dairy Management; Department Store Work; Drug Retailing; Dry Goods Retailing; Retail Grocery; Hardware Retailing; Hatchery Management; Hotel Management; Ladies Ready-to-Wear; Librarianship; Machinist; Apprentice Mortician; Retailing of Men's Clothing; Apprentice Nursing; Photography; Printing; Radio Servicing; Secretarial Work; Sheet Metal Work; Shoe Retailing; Variety Store Work; Waitress Work.

Outlines are available at .10 per copy from the Department of Industrial Education, University of Missouri, Columbia, Mo.

New Jersey: Suggested Course in Mathematics for Apprentices in the Sheet Metal Trade, prepared by the Vocational Division, State Department of Public Instruction and Camden County Vocational School. John Spencer, Inc., Printers, Chester, Pa., 75¢.

New York: Suggested method for planning related courses in apprentice training programs include (1) recommended subject areas, (2) a suggested schedule of subjects and hours of instruction for each year of apprenticeship, and (3) a selected bibliography. They are intended for apprentice supervisors and teachers, and the following are available:

Automotive Mechanic Apprentice; Blacksmith Apprentice; Boilermaker Apprentice; Bricklayer and Mason Apprentice; Cabinetmaker and Millman Apprentice; Carpenter Apprentice; Draftsman—Mechanical—Apprentice; Electrical Lineman Apprentice; Electro-plater Apprentice; Floor Covering Apprentice; Foundry Trades Apprentice; Lather, Wood-Wire-Metal Apprentice; Machinists Apprentice; Millwright Apprentice; Painting, Decorating, and Paperhanging Apprentice; Patternmaker—Metal—Apprentice; Patternmaker—Wood—Apprentice; Plasterer Apprentice; Refrigeration Apprentice; Roofer Apprentice; Sheet Metal Worker Apprentice; Steamfitter Apprentice; Structural Iron Worker Apprentice.

Course outlines of related instruction for apprentices for use of teachers are available as follows:

Suggested Course Outline in Safety Instruction for Apprentices; Related Information for Foundry and Patternmaking; Related Information for Painting, Decorating, and Paperhanging; Course in Industrial and Labor Relations for Apprentices.

General publications relating to instructional materials and the operation of apprentice training programs are available as follows:

Suggested Method for Planning Related Courses in Apprentice Training Programs; Selected Bibliography for Apprentice Trades; Suggested Minimum Standards Pertaining to Related Instruction for Apprentices Registered under Standards Approved by the New York State Appprenticeship Council; Relationship Between Apprentice Training Service Representatives and Vocational Educators in Apprentice Training; Organization and Administration of Apprentice Training, Occupational Extension, and Industrial Classes for Adults; Adult Education Through Apprentice Training, Occupational Extension, and Industrial Classes.

All of these publications are available in limited quantity without charge, through Charles T. Klein, supervisor of apprentice training, State Education Department, Albany 1, N.Y. (Use school stationery.)

Courses of study for student and teacher use will be available in the near future in the following:

Carpentry, $1.50; Sheet Metal, $2.50; Electrical Installation and Practice, $1.75; Plumbing and Pipefitting, $1.50; Machine Shop Practice—Drawing, Science, and Mathematics, $1.00; Machine Shop Practice —Machine Tools, $1.75.

New York City: Course of study outlines for teacher use include a schedule of subjects for all years of apprenticeship and set up general objectives of the course. Instructional topics are outlined for each subject included in each year of the course and in most of the outlines teachers' references and teaching suggestions are indicated. The following are available:

Auto Mechanics' Apprentices; Carpenters' Apprentices; Electrical Trades Apprentices; Beer Pump and Block Tin Plumbers' Apprentices; Bricklayers' Apprentices; Business Machine Mechanics' Apprentices; Cement Masons' Apprentices; Foundry Apprentices; Granite Cutters' Apprentices; Machinists' Apprentices; Manufacturing Jewelers' Apprentices; Plasterers' Apprentices; Plumbers' Apprentices; Tile Layers' Apprentices.

Address requests for copies to John F. Novak, administrator, Veterans and Reconversion Training Program, 110 Livingston St., Brooklyn 2, N.Y.

Tennessee: Related instructional materials for four fields are available. For each occupation there is one monograph on "schedule of processes" and another containing "assignment sheets." They are for teacher and student use in the diversified occupations program, but are suitable for adult on-the-job training programs also. Available are:

Dental Assistant—Schedule of Processes; and Pre-Nursing Training—Schedule of Processes; each .35. Dental Assistant—Assignment Sheets; and Pre-Nursing Training—Assignment Sheets; .50 each.

These publications are available from the Cooperative Book Store, University of Tennessee, Knoxville, Tenn.

Wisconsin: Student study guides for apprentices, on-the-job trainees, and others include (1) assignments in the technology of the trade and related subjects based on standard texts; (2) study questions, student check questions, and periodic examinations on both technology and related information; (3) as-

(Continued on page 23)

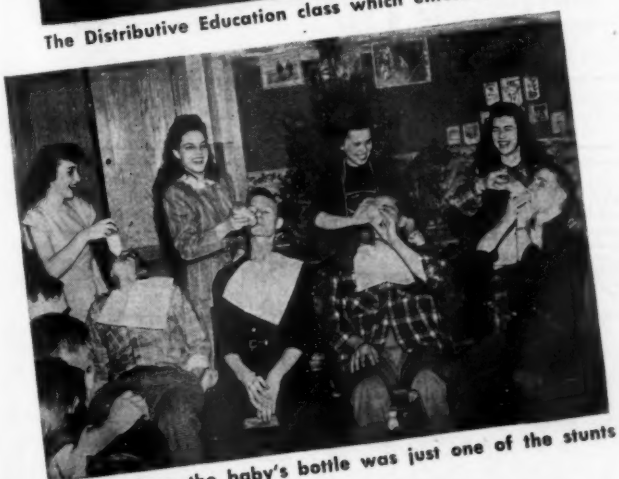
DONA BROWN
Coordinator of Distributive Education
Huron, South Dakota

In Their Free Time

Instructors Have a Responsibility for the Extra-Curricular Activities of the "Co-ops"

A pheasant dinner for the football team given by the D.E.'s

The Distributive Education class which entertained the team



Drinking from the baby's bottle was just one of the stunts

CO-OP students, after they do their school work, hold down a job, sing at choir rehearsals, and go to church, don't have much time in which to acquire a well-rounded social background. If they are to become understanding and responsible citizens, their leisure time must include worth-while projects. They need experience in management of activities, recognition of group accomplishment, and the experience of seeing organization work at its best. The coordinator therefore has to do much planning.

Motivation during a training class is more important than extra-curricular motivation, but both are necessary. It is only through sponsoring field trips, assemblies, dances, and other social functions that co-op students get in touch with and become a part of the school and town. They don't have time to shop during shopping hours and they leave school before the activity period begins. Consequently they do not have an opportunity to fraternize with teachers, students, or business people unless special effort is made.

Some projects are too long to complete in one hour. The local public service company invited a class to be its guests at a dinner in its electric kitchen. As the preparation and demonstration takes about one and one-half hours, the group was invited to the model kitchen immediately after work, dressed in clothes suitable for kitchen work. They were instructed in the use of the stoves, refrigerator, and appliances necessary for preparing the meal. Then they took over preparation of the food. The demonstration followed which included an electric dish-washer, Bendix, and different types of mangles.

One field trip included a visit to a local fur store where, after studying the window displays, direct selling, and plant layout they visited the pattern and workrooms and saw the various furs being worked into coats. The group was next taken to the sales floor where they were used as models while the sales manager gave demonstration sales talks to various types of customers.

There are few business establishments which aren't glad to take the time to explain their organization and their problems to a group of serious-minded high school students.

Co-op classes have made money by sponsoring dances and other activities and give assembly programs at least twice a year. The most successful annual venture is the style show. After deciding upon a theme, each member lists what she will wear, and the stage background is made in class. A wedding theme was used last year. Everything was shown for a trousseau from beach wear to furs, formals, and the wedding gown. The finale was entrance of the bridal party.

The show took almost an hour. The janitor removed the scenery, girls packed the clothes they had borrowed and returned them to stores on their way to work. No one took a minute from school work for the job, yet it was fun and entertaining to the school.

Without an occasional school party, life would be dull. Co-op students traditionally entertain the football and basketball teams at dinner, whether the team wins, loses, or ties. For football, about 45 pheasants are cooked and the students bring the balance of the meal.

There are many forms of extra-curricular motivation, but after 10 years of experimenting, these examples seem to be the best types for a town of 12,000 population. They have kept both school and town aware of a small group, as well as furnishing valuable experiences for the students.

Retooling Vocational Education

EVERETT L. AUSTIN
Teacher Education, Rhode Island

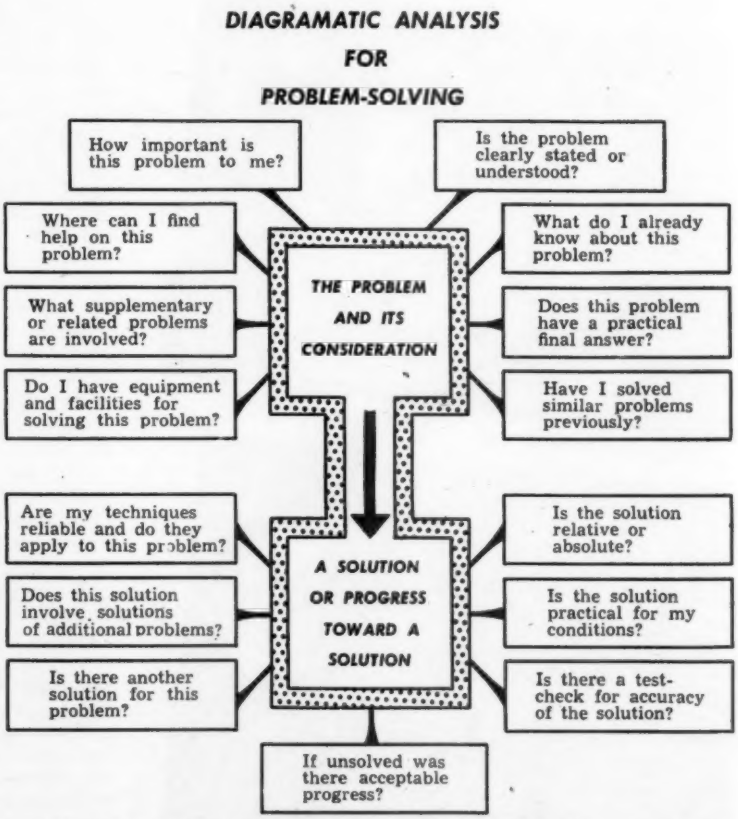
VOCATIONAL education has demonstrated beyond question that learning can be greatly stimulated by supplementing the textbook and printed page with improved teaching tools. Agriculture has taken much of its learning to the farm, the forest, and the laboratory. Trade and industrial education has used the shop and machines from the beginning. Home economics has put reality into its reading and study by taking its problems to the home. Distributive education has used the market place. Ability to think still is a cornerstone in the purpose of education. Thinking about real problems in their natural setting develops ability to do as well as to know. Each supplements the other.

Seeing and hearing accurately form much of the basis for the training of the scientist, surgeon, and musician as well as for the engineer, farmer, and homemaker. During the past few decades several new tools have been invented and/or perfected which enable the eyes to see farther, more accurately, and more completely; and the ears to hear much which would ordinarily be inaudible. What are these new educational tools? Who in vocational education should use them? Granted that more progressive schools are using them to some extent, why is their use so limited? What can be done to improve their use and expand it?

A listing of these tools seems simple—objects, models, motion pictures, still pictures, slides, transparencies, recordings, charts graphs, maps, blueprints, posters, and even cartoons. Often the added features of color and sound are included. In order to produce and use them properly, there are cameras, projectors, radios, phonographs, microscopes, screens, splicers, etc. There are problems of purchasing, servicing, storage, repair, and replacement. Planned and supervised visits to farms, homes, industries, and stores, as well as exhibits and demonstrations, have become good teaching practice. To the novice, all this may sound quite formidable. It is simple and regular routine for the veteran.

One real barrier in many cases is the fact that the teacher who is the skilled worker with these modern tools, has had little or no effective training in their production and use. The old adage that the worker is known by the tools he uses applies here too. The only real answer is pre-service and in-service training. It is not an easy answer or a quick one but it is a necessary one for real achievement.

An equally fundamental problem is the attitude of school administrators and teachers toward the value and use of visual and auditory aids. Unless the whole staff—administrators, supervisors, and teachers—is willing and able to plan intelligently and make a place in the teaching schedule and lesson planning for visual and auditory materials, their use will continue to be irregular and limited.


DIAGRAMATIC ANALYSIS
FOR
PROBLEM-SOLVING
How important is this problem to me?
Is the problem clearly stated or understood?
Where can I find help on this problem?
What do I already know about this problem?
THE PROBLEM AND ITS CONSIDERATION
What supplementary or related problems are involved?
Does this problem have a practical final answer?
Do I have equipment and facilities for solving this problem?
Have I solved similar problems previously?
Are my techniques reliable and do they apply to this problem?
Is the solution relative or absolute?
A SOLUTION OR PROGRESS TOWARD A SOLUTION
Does this solution involve solutions of additional problems?
Is the solution practical for my conditions?
Is there another solution for this problem?
Is there a test-check for accuracy of the solution?
If unsolved was there acceptable progress?

Diagrams and charts are useful in portraying relationships. They may show a great deal of material in a small space. Does this one have too much?

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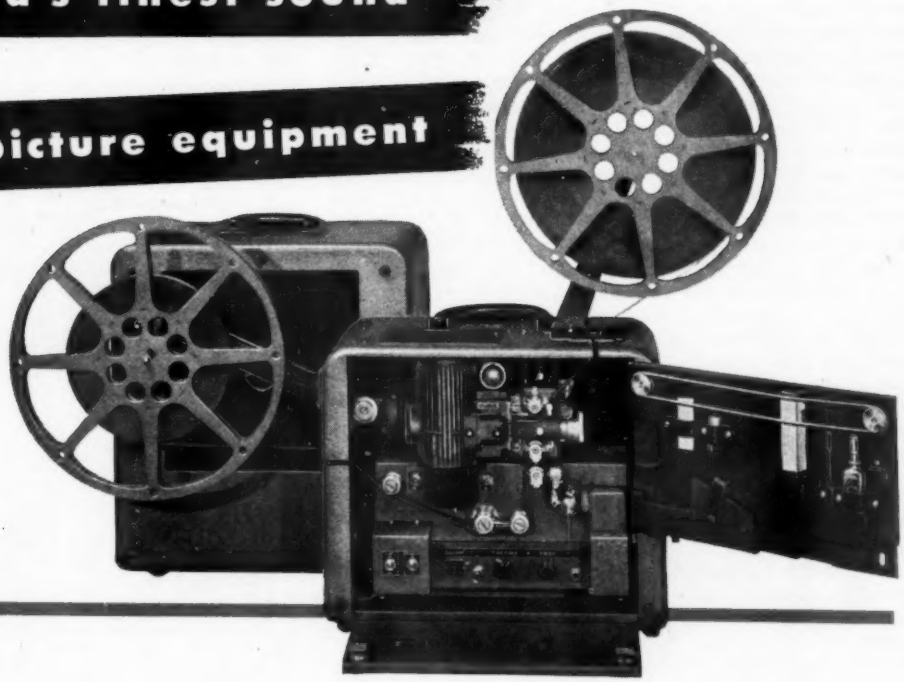

SOUND motion pictures—as an aid to good teaching—help speed instruction and lighten today's extra-heavy teaching load. They are tireless "assistant teachers"—always ready to shoulder a share of the heavy burden all teachers are now carrying. They are helpers in the truest sense of the word, bringing the world in sight and sound into the classroom.

Filmosound, the famous Bell & Howell 16mm sound projector, is known to educators everywhere for the superior quality of its pictures and sound . . . free of all sense of mechanical intervention. The painstaking engineering and distinguished craftsmanship in Filmosound are expressed in rugged simplicity, complete dependability, and truly easy operation.

Filmosound assures the greatest effectiveness of any audio-visual program. Bell & Howell Company, 7170 McCormick Road, Chicago 45.

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Bell & Howell

Since 1907 the Largest Manufacturers of Professional Motion Picture Equipment for Hollywood and the World

It has been proved by sound research that students learn more in a given time, retain what they have learned for longer periods, and put more productive effort into their studies because of the added interest, when visual and auditory aids are used properly. Unfortunately, many students and many parents still think that all motion pictures are for entertainment. Instructional films call for special teaching techniques. Previews, vocabulary study, discussions, reshowings where necessary, testing for results, and good projection techniques are essential if a motion picture is to be functional as a tool in learning.

The use of sound where sound adds to natural setting, and the appropriate use of color are exceedingly important in developing clear ideas and understandings easily and quickly. There are plenty of instances where motion or sound would be inappropriate and distracting but in manipulative operations, motion (including slow-motion) has been very effective. Animated drawings and "exploded" photographs are useful in shop work and engineering. Color is highly essential in teaching interior decorating or in such a problem as lubricating systems of a motor. Graphs and diagrams are often improved by using color.

The complaint is sometimes heard that visual aids are expensive. So are X-ray machines for the surgeon, power machinery for the industrialist, or fine display cases and refrigeration for the food merchant, but in each case the operator uses them because they are productive of important information or greater work efficiency or increased sales of better foods. Improved tools are used because they produce improved results. The same is true of visual and auditory material in teaching. To use the printed page or the spoken word only is like returning to horse and buggy for transportation or the kerosene lamp for illumination.

Great progress has been made recently in the equipment and materials used as visual and auditory tools. World War II stimulated their use greatly. Commercial agencies have become much more aware of their powers and alert to their uses. Progressive schools are using them more freely. Language teachers use recordings for drill in correct and uniform enunciation. Music teachers have stepped up the use of radio and recordings for music appreciation and skills. Motion pictures now may be shown in normal light, thus eliminating the necessity of darkened rooms and questionable ventilation.

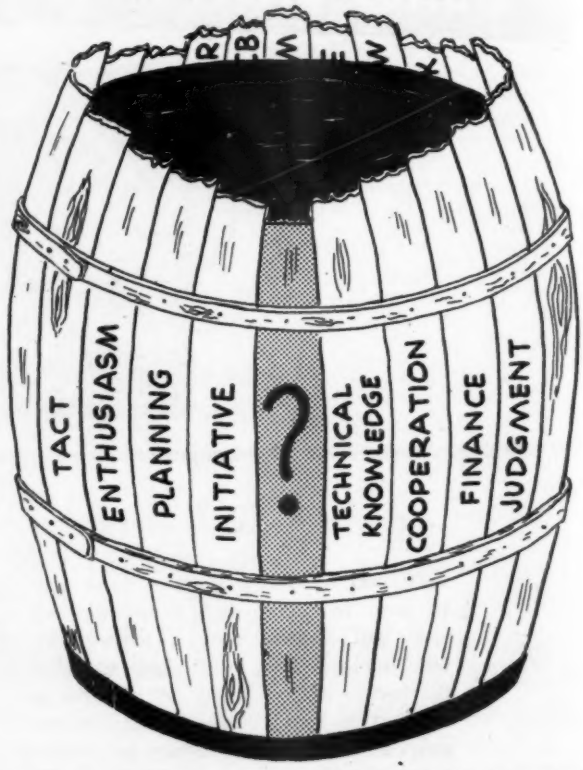
The 2x2 colored transparency is a good illustration of a relatively new tool that is becoming very popular. It is cheap, easily stored, particularly effective where color is important, and can be made by any alert teacher with a minimum of training and experience. A working model, such as a cut-away motor showing the moving parts in action, will give more knowledge and a clearer understanding of how a motor operates than any printed reading material alone can possibly do.

A carefully organized plan for cataloging and storing materials not in constant use, whether films, charts, slides, or any other material, will pay dividends. To have the appropriate material at hand when the lesson plans and course outline call for its use is highly essential. Notations in the lesson plan referring to a small card file or folder will call attention to stored materials which might be forgotten temporarily. Timeliness and availability for use when needed are obvious. For films, this means ownership wherever possible rather than rental or borrowing. For those that must be rented or borrowed, advanced booking and planning are exceedingly important. To break into planned lesson sequences merely because a film or other material happens to be available is bad, educationally.

Vocational people long since have discovered the value of making their own teaching materials. Collaboration with other departments in the same school system has not been used to any appreciable extent. It has definite possibilities. The art department can make excellent charts. Art and home economics have much in common. The photography club will take on new vigor when its products are used by other teachers and students. Slides, transparencies, and film strips are their stock in trade. The shop can develop skill in making useful models as well as in making projects for discard later.

Why not take an inventory of the teaching job with the idea of retooling? A little collective bargaining between superintendent, principal, supervisor and teacher on how to put instructional materials to work through a more effective use of visual and auditory aids and materials may be surprising. It has been done; is being done even where resources seem limited.

LOCATING LIMITING FACTORS

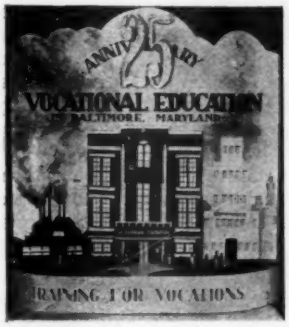


What is your lowest stave? Your total capacity to succeed is limited by the shortest one. Can you name yours?

Curricular Aspects of Audio Visual Materials

In terms of effective teaching, research has revealed the following points: (1) Audio-visual materials awaken interest; (2) are powerful prods and can accomplish controlled changes in attitude; (3) encourage participation in discussion and the exchange of ideas; (4) can accomplish amazing upward spurts in reading comprehension; (5) can accomplish greater than traditional gains in vocabulary and knowledge; (6) accomplish factual understanding and retention of fact. —*W. A. Wittich, Director Bureau of Instruction, University of Wisconsin.*

Baltimore Recognizes Vocational Program



MORE than 1,000 parents, teachers, educational leaders and students paid honor to the Division of Vocational Education of Baltimore Public Schools during the week of April 27-May 3. Major activities included an open house in all schools in the city in which vocational education functions and an exhibit of vocational education activities was presented in Baltimore Polytechnic Institute.

One hundred and fifty individual booths showed the work of the various departments. On the evening of May 2, a narrated review illustrated with color pictures was presented in the auditorium. Exhibits included metal work, dress designing, leather work, etc. and depicted nearly every occupation represented in Baltimore. Trade cooking students prepared an enormous 25th anniversary cake.

The Maryland Vocational Association held its annual spring luncheon on May 3 in connection with the anniversary. Membership is at an all-time high.

John A. McCarthy, assistant commissioner of education in New Jersey gave the main address, "Vocational Education Looks Ahead." Life memberships in the AVA were presented to William H. Lemmel, superintendent of public instruction in Baltimore by the Baltimore City members of the MVA, and Thos. G. Pullen, state superintendent of education, received the same award from members of the MVA.

Howard E. Ziefle, president of the Association and James O. Proctor, chairman, were responsible for this phase of the week's celebration.

Charles W. Sylvester, director of vocational education in Baltimore and treasurer of the AVA was repeatedly recognized for his fine work during the week.—*James O. Proctor, Supervisor, Vocational Education for Adults, Baltimore, Maryland.*

Instructional Materials

(Continued from page 18)

signment charts. They are available from the American Technical Society, Chicago, Ill., as follows:

Automobile Mechanics, Part I and Part II; Carpentry; Mechanical Drafting, Part I; Technology, Part II; Related Subjects; Machine Shop Work; Store Organization and Management.

Other monographs of a similar nature are being printed for electrical appliance service, farm equipment service, merchandise display, sheet metal, arc and gas welding, and tool and die work.

Apprentice training materials are available from the Wisconsin State Board of Vocational and Adult Education, Madison, Wis., as follows:

Baking, Technical and Related Study Materials, 4 Units; Barber Science, Related Technical Information and Assignment Units, 13 Units; Cosmetology, Related Information and Assignments, 12 Units; Electricity, Apprentice Manual and Study Guide, Units of Instruction; The Electrical Code; Foundry, An Outline and Related Instruction; Patternmaking, Outline and Plan of Procedure for Related Work; Painting and Decorating, Technical and Related Information, Course Outline, 20 Units of Instruction; Plumbing, Work Manuals Using Basic Text and Other References, Assignment Units 1 to 24.

Distributive education publications available:

Dairy Routemen's Course, Instructor's Manual, Information Bulletin; Fitting and Selling of Shoes, Course Outline for Classes; Fitting and Selling of Shoes, Text Material; Men's Clothing (Selling), Instructor's Bulletin, Information Bulletin; Men's Dress Shirts (Selling), Instructor's Manual, Information Sheets; Men's Felt Hats (Selling), Instructor's Manual, Information Sheets; Men's Neckties (Selling), Instructor's Manual, Information Bulletin; Men's Knit Unionsuits, Undershirts, and Shorts (Selling), Instructor's Manual, Information Sheets; Pharmacy, Teachers' Guide, Information Bulletin; Retail Credits and Collections, Instructor's Manual; Retail Sales Technique, Instructor's Manual, Information Bulletin; Retailing Fresh Fruits and Vegetables, Text Materials.

U. S. Office of Education: Bulletins and leaflets of interest to apprentices, journeymen, and on-the-job trainees, available from the Superintendent of Documents, Washington, D.C., and prices, follow. Cash must accompany orders.

Stone Setting, 20¢; Granite Cutting, 35¢; Training for the Painting and Decorating Trade, 45¢; Vocational Training for Firemen, 10¢; Bricklaying, 80¢; The Worker, His Job and His Government, 15¢; Training School Bus Drivers, 30¢; Safety for the Worker, 5¢.

Come to the Fair

The first national Scholastic Industrial Arts Fair will be held at the Chicago Museum of Science and Industry August 17 to Sept. 7. Thousands of entries now are assured in the several classifications for students' work. Judging will precede the opening of the Fair and all articles submitted will be exhibited. All vocational and industrial arts teachers are invited.

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Ideal for art, woodworking and lab classes. Also for all types of model building — planes, boats, houses, stages, etc. Designed for safety and firm control—vise-like collet construction locks blades in securely.—X-acto gives amateurs added skill, helps hold students' interest. Singly and in sets,

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WRITE FOR SAMPLE OFFER & PROJECT BOOKLETS—To school executives and teachers, writing on school letterhead, we will be glad to send catalog, sample offer and free copies of helpful booklets on model building, whittling, paper sculpture, art techniques, etc.

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With the Associations

Alabama Vocational Association has elected H. W. Green, Auburn, president; Annie Lou Wigley, Huntsville, vice president; O. F. Wise, Birmingham, secretary-treasurer.

Delaware Vocational Association will hold its annual meeting (tentatively) November 17. Arrangements also are being made for a series of six radio broadcasts on vocational education. The *Delaware Vocational Bulletin,* edited by Carroll A. Nolan, state supervisor of distributive education, made its second appearance May 1.

Missouri teachers and supervisors of industrial arts and trade and industrial education held their annual spring conference at Columbia, April 4 and 5, sponsored jointly by the Industrial Education Department of the University of Missouri and the Trade and Industrial Section of the State Department of Education. The theme, "A Comprehensive Program of Industrial Education for Missouri," was discussed and Hubert W. Wheeler, newly appointed state commissioner of education, spoke.

The Arizona Vocational Association held a spring work meeting in Phoenix March 15. Plans for a vocational education exhibit at the state fair in November were formulated, and requirements for recertification of trade and industrial and distributive education teachers were considered. The final spring meeting was held April 26 at Tucson, culminating in a family picnic in Sabino Canyon.

Michigan Vocational Association held its annual spring meeting at the Clear Lake Camp of Western Michigan College of Education at Dowling, May 23 and 24. Revision of the constitution was considered.

San Antonio industrial arts and vocational teachers, at their monthly breakfast on April 12, had as speakers E. L. Williams and J. J. Brown, vice presidents of the AVA. Mr. Williams explained the membership organization of the AVA and plans for the Los Angeles convention. Mr. Brown spoke of the importance of the *American Vocational Journal* in the field of education and the function of the vocational rehabilitation program.

Industrial arts and trade and industrial teachers of Louisiana met at Northwestern State College at Natchitoches April 18 and 19, in a state-wide conference. Out-of-state speakers were E. L. Williams, director, industrial extension service, A & M College of Texas and vice president, AVA; Claude Ewing, supervisor, vocational curriculum, Chicago Public Schools; and H. H. London, head, industrial education department, University of Missouri, W. J. Robinson, associate professor, industrial education, Northwestern State College, was program chairman.

The "Shop Teacher's Service Group," under the sponsorship of the New Hampshire Vocational Association, is offering professional service to teachers, through group meetings on Saturdays at which experts help with special problems. The annual meeting of the Association will be held Nov. 8, in Concord.

Mississippi Vocational Association at its annual meeting elected B. M. Trapp, Duck Hill, president; R. H. Fisackerly, Department of Education, Jackson, secretary-treasurer; and the following vice presidents: W. L. Newton, Meridian; Erma L. Barber, Hattiesburg; F. S. Fitzgerald, Inverness.

California Business Educators' Association, comprised of six regional associations which cover the state, met in Los Angeles April 2 and 3. Sectional meetings on the teaching of typewriting, shorthand, bookkeeping, distributive education, employment problems, and guidance, were held.

Among the speakers were D. D. Lessenberry, University of Pittsburgh; Louis A. Leslie, and Robert Slaughter, Gregg Publishing Co.; A. T. Danielson, president, Sales Managers Association of America; Howard Campion, assistant superintendent of schools, Los Angeles; Walter E. Elieson, U. S. Department of Commerce, Los Angeles.

Dr. Louis Mudge, Fresno State College, was elected president for the coming year.

Florida State Agricultural Teachers' conference will be held July 7 to 11, and the state FFA convention June 23-27. The Future Farmer Forestry Training Camp for first year boys will be held at Camp O'Leno July 13-19, and for second year boys, July 20-26.

The sixth annual convention of the Texas Vocational Teachers Association was held at Forth Worth April 3-5, with approximately 900 members in attendance. Fifty-four firms had commercial exhibits and Harry Sears, deck officer of The Ship, presided at the distribution of $1,800 in prizes.

Speakers included J. P. Moore, superintendent of schools, Fort Worth; D. W. Williams, A & M College of Texas; W. W. Finlay, Guiberson Corp., Dallas; W. E. Lowry, executive director, State Board for Vocational Education; and B. E. Jackson, Texas State College for Women.

Wade Banowsky, representative from the distributive education group, is the new president. Vice presidents are Harriet Griffin, guidance; Clarence Rabb, agriculture; Vannoy Stewart, veterans' education; and C. H. Groneman, vice president-at-large.

Vocational High School Teachers Association of New York City, Inc., at their April meeting discussed the new state salary bill. Speakers were Kenneth Beach, Cornell University, who spoke on the expanding field of higher education dealing with vocational education and plans of Cornell for this type of work this summer; Morris Siegel, assistant superintendent, who spoke on the aspects of the new salary law as they apply to vocational school personnel, and George H. Fern, managing editor of the *American Vocational Journal,* who discussed "Trends in Vocational Education." Harry Lewis is president of the Association.

New York State Vocational and Practical Arts Association elected Malcolm B. Galbreath, director of the Morrisville Technical and Agricultural Institute, Morrisville, president at their 13th annual convention in New York City, April 7-10. Earl J. Boggan, Sr., Emerson Vocational School, Buffalo, is vice president; C.

Kenneth Beach, New York State School of Industrial and Labor Relations, secretary; and Dorothy Lawson, Home Economics Bureau, The State Education Department, treasurer. The immediate past president, Ferdy J. Tagle, first assistant, New York School of Printing, New York City, was chairman for the convention.

More than 12 local teachers' associations and guilds sponsored the convention; more than 35 sectional meetings were held and more than 160 persons representing labor, management, and education participated, contributing reports of outstanding state and national activities and developments.

There were 22 commercial exhibits and The Ship program included the customary treasure chest. Three women's guilds participated in the exhibits, and provided continuous demonstrations of millinery work, beauty culture, and trade dressmaking. The electrical teachers guild presented latest developments in television in both black and white and in color, as a teachable subject and a teaching aid. A fashion show was given through the cooperation of the industry.

Two medals were presented at the convention. The State Association honored Howard Bennett, principal of Edison Technical High School in Rochester, and the Vocational High School Teachers Association of New York City presented their Medallion Award to George F. Pigott, Jr., associate superintendent of schools, New York City.

Speakers at the general sessions were John E. Wade, superintendent of schools; George F. Pigott, Jr., associate superintendent of schools assigned to vocational high schools; Ralph Wright, executive secretary, Allied Printing Trades Council of Greater New York; Harry Lewis, president, Vocational High School Teachers Association of New York City; Lawrence F. Ashley, chief, division of vocational education, Yonkers, N. Y.; William G. Avirett, education editor, *New York Herald Tribune;* Mrs. Betty Hawley Donnelly, vice president, New York State Federation of Labor; William H. Friedman, president, Carey Press Corp., N.Y.; Oakley Furney, state director of vocational education, Albany; Charles A. Brind, executive assistant to the state commissioner of education.

The American Association of Technical High Schools and Institutes arranged the program of the Technical education section. Richard R. Dry, director, Buffalo Institute of Applied Arts and Sciences, was chairman. The Association of Vocational High School First Assistants had the section on Vocational Education Supervision. Trade Education for Boys sections were arranged by the Machine Shop Teachers Association of the City of New York, the Automotive Teachers Guild of New York, Printing Teachers Guild and the Electrical Teachers' Guild of New York. Trades for Girls sections were given by the Trade Dressmaking Teachers Guild, Millinery Teachers Guild and the Beauty Culture Teachers Guild. The Vocational High School Teachers Association of New York had the Vocational Education section. Harry Lewis, first assistant in charge of radio and electrical activities, Westinghouse Vocational High School, Brooklyn, is president, and chairman was Alan Blackman, Food Trades Vocational School and secretary of the Association.

West Virginia Branch of the AVA held its first annual meeting since before the war at Jackson's Mill and elected Cecil Simms, Logan, president; Henry Knight, Charleston, secretary-treasurer. The State Industrial Arts Association became affiliated with the AVA. Speakers were L. H. Dennis, AVA executive secretary; Wm. Shimer, pres., Marietta College; J. Stanley Pawelek, Baltimore; C. W. Hill, past president.

Texts and references for vocational courses

Plastic Craft
By Ernest DeWick and J. H. Cooper

The first-complete, class-tested guide to shop and handicraft work in a highly rewarding medium. Includes scores of projects for all degrees of skill. Requires no expensive equipment. Full clear directions for all work are illustrated with detailed working drawings. Many new and original designs suggested, and directions for fine art work as well as shop work. $5.00

Aircraft Woodwork
By R. H. Drake

This text by an experienced teacher presents the background information, full instruction in tools and techniques, and step-by-step shopwork for a course that meets all the CAA requirements for the aircraft mechanic's license in woodwork. Illus. $3.50

Shaper Operations
By Lewis E. King

The third book in the King series of manuals for Machine Shop Operation. (Previously published: *Lathe Operations; Milling Machine Operations),* Organized for study either in the shop theory class or in the shop concurrently with work on the machine. Illus. $1.00

Practical Marine Electricity
By S. N. LeCount and H. S. Dusenbery

A complete course in the electrical fundamentals and the installation, operation and maintenance of every piece of electrical equipment on modern merchant ships. Illus. $3.50

Introduction to Navigation and Nautical Astronomy
By Shute Shirk, Porter and Hemenway

An outstandingly clear, complete text on both sea and air navigation, written by four successful teachers and checked by Coast Guard and Naval authorities. Many specially drawn illustrations, 400 practical problems, full tables. $4.50

Aircraft Drafting
By H. H. Katz

Written by a man who has trained hundreds of draftsmen for Republic Aviation and Consolidated-Vultee, this book includes much useful information on manufacturing practices as well as full, clear instruction in aircraft drafting techniques. Illus. $5.00

Principles of Radio for Operators
By Ralph Atherton

Very clearly presented, practical instruction in the fundamental operating principles of all parts of radio including antennas. Makes use of the methods and teaching aids found so successful in training personnel for war service. Includes 470 illustrations, class demonstrations, lists of visual aids, and much other helpful teaching material. $3.75

The Craftsman Prepares to Teach
By D. F. Jackey and M. L. Barlow

Simply written, practical directions for planning and conducting all types of vocational courses. A useful handbook for teachers. $2.00

• ASA's Standards Again Available

The authoritative dictionary of graphical representation has been revised and is again available.

The American Standards Association came into existence in 1918. Today any man who knows any phase of engineering well is acquainted with ASA. It is "a federation of 88 national technical, trade, and governmental organizations, maintained by industry to promote the development and use of standards" (American Standards Association Publications). Its acceptance by the American Society of Mechanical Engineers, the Society of Automotive Engineers, Inc., the Society for the Promotion of Engineering Education and other technical societies gave its general acceptance an impetus which has resulted in the development of more than 800 standards approved to date. These include several areas of industrial activity. All published standards represent general agreement on the part of engineers, manufacturers, consumers, technicians, the Armed Forces, and other governmental agencies.

All teachers of industrial education, and especially teachers of technical drafting, should be conversant with the recommendations of the ASA. Although not universally accepted, their standards are the most authoritative available and are the most generally accepted. Only where schools are training men for employment in corporations having standards in conflict with ASA's recommendations can they justify teaching and contrary practices.

Publications worthy of attention of teachers of drafting include: Z14.1 1941, "Drawings and Drafting Room Practice"; the Z32 group of graphical symbols and especially Z32.13, "Abbreviations for use on Drawings"; Z10.1—1941, "Abbreviations for Scientific and Engineering Terms"; A13—1928, "Schemes for the Identification of Piping Systems"; the B1 group on screw threads published from 1935 through 1944; B18.2—1941, "Wrench Head Bolts and Nuts and Wrench Openings"; the B16 series on cast iron and steel pipe and pipe fittings; B4a—1925, "Tolerances, Allowances, and Gages for Metal Fits"; and B5.10—1943, "Machine Tapers, Self-Holding, and Steep Taper Series."

Any text book being adapted today for any class of technical drafting should be checked for conformity with ASA's recommendations.—*Robert W. English, Assistant Professor, Industrial Education, Southern Illinois Normal University.*

• Labor Workshop

A workshop in labor and industrial relations for social studies teachers and others interested will be held at the University of Illinois June 15 to July 3, under the auspices of the Institute of Labor and Industrial Relations. Participants will visit industries in Chicago, attend labor meetings, and meet with representatives of management and labor.

Personnel will be composed of leaders in education, economics, labor relations, labor, and management.

• Massachusetts Has A Self-Sustaining School

When New Bedford, Mass., gave up its city stables, the New Bedford Vocational School moved in. Today its equipment and facilities represent an investment of approximately $1,000,000.

The school was founded in 1908 by Charles R. Allen, the first of its kind in the state. Today it generates its own steam and electricity for light, heat, and power while it trains boys to become firemen and plant engineers. The machine shops do all the millwrighting; carpentry students do all construction and alteration work; more than 1,000 steel lockers were built in the welding department; desks, shelves, furniture and cabinet work all are turned out in the shops.

These shops are operated as an industry; students punch time clocks and for two weeks work in the shops as they would in industry. The third week is spent in related class work. Safety training is part of all courses.

During the war, 3,500 men were trained for industry and 680 Coast Guards were trained for the Navy. Since the war, emphasis has been placed on training veterans. Apprentice training is almost 100 per cent a veterans program. There now are 10 classes, eight of which are run three hours per night, two nights a week, and two are run Saturday mornings, with 200 men attending. The evening trade extension courses enroll 500 men in 32 classes, 70 per cent of whom are veterans—*Herbert W. Moore, New Bedford Vocational School and President, Massachusetts Vocational Association.*

• AVJournal Artist Goes to Alaska

Mrs. Adolph Kronengold, *Scholastic* staff artist who was assigned to the *American Vocational Journal* during the past school year, leaves with her husband and 12-year old son Eric, for Anchorage, Alaska, June 20. A family of artists, the Kronengolds expect not only to paint, but to establish an art school there, teaching magazine layout, jewelry making and crafts, painting, and illustrating. Mrs. Kronengold is a graduate of N.Y.U. and Pratt Institute, Mr. Kronengold of Penn Academy and Grand Chaumiere, in Paris. He has done many covers for the *New Yorker* and will have the September cover on *Holiday.*

With a 9-passenger car and house trailer, the Kronengolds will first drive to New Orleans, and expect to arrive in Alaska about the middle of August.

• Guidance Conference

University of Michigan Institute for Human Adjustment will hold a guidance conference on the measurement of student adjustment and achievement June 26 and 27. It will be conducted by the Bureau of Psychological Services.

National leaders in the fields of psychology, education, and student personnel will present and evaluate recent researches and their practical application.

• Alabama Develops Progression Charts

Industrial education in Alabama has developed a progression chart and study guide which has been enthusiastically endorsed by employers, educators, labor leaders, and most important, by trainees themselves.

The progression chart and study guide is a teaching device consisting of an occupational analysis, a bibliography of reference books, job sheets with related study questions and suitable references, and a means of recording the progress of the trainee both in the shop and in the class. It is being used in Alabama in the high school cooperative program, in training veterans on-the-job, in apprentice training, in all-day trade schools, and in trade extension classes. It can be adapted to any trade or occupation where training is justified. If properly made, it provides a complete analysis of the occupation in terms of what there is that the learner must know and do.

Too often vocational teachers dilute their efforts by bringing in subject matter that probably is fine but is outside their field. A well-constructed chart eliminates non-related material and enables the teacher to stick to his job of trades education, leaving other material necessary to a well-rounded curriculum to those who are as well prepared to teach their subjects as he.

The progression chart and study guide allows the trainee to progress according to his individual initiative and abilities. He is not hampered by group progress or by a prescribed time-serving curriculum. When used by trade extension groups, it allows the student to select and master that part of the trade he wants, needs, and can use. This eliminates the necessity of his covering a specified course of study if he already is master of part of it.

In an on-the-job training program one copy of the occupational analysis is given the training agency. It serves as a training timetable and a permanent record of job accomplishment. It helps the training agent and coordinator in planning the learner's job experiences so he is not held on a job beyond the time necessary for job mastery.

Making an acceptable chart and study guide can be accomplished only by a group of consultants who are recognized as competent workers. It requires much thought and care in preparation of the material. The physical job of reproducing and distributing progression charts for a state-wide program is tremendous. Alabama trade and industrial education group, under the direction of State Supervisor E. R. Plowden, has found it will accomplish results worth the time, effort, and expense required.—*Rex Sullivan, Assistant State Supervisor, Trade and Industrial Education, Alabama.*

• 15th Poly Royal

California State Polytechnic College held its 15th annual Poly Royal at San Luis Obispo May 2 and 3. This country fair on a college campus shows the achievements of more than 1,500 students in eleven agricultural and seven industrial departments.

60 Per Cent

(Continued from page 16)

attempt to give service in the vocational guidance field who has not worked in industry or business and earned a living at something beside school teaching. Before he undertakes a job information and vocational guidance assignment he must have experienced looking for a job and holding a job.

The philosophy, "every teacher is a guidance teacher," also may be questioned. True, every teacher can contribute from his experience with his students, but trained specialists in this field are needed. Second, industrial arts is challenged, definitely at this time, both from the viewpoint of vocational guidance by helping students to discover their aptitudes and interests, and of creating an interest on the part of students for entering into some sort of work which can be taught in the secondary schools. The value of work and the dignity of work are not much in the minds of youth today and through no fault of their own.

The industrial arts program must include shop courses offering varied experiences under skillful teachers for the purpose of discovering unexposed talents and aptitudes, and shop experiences which can be easily used to stimulate interest in the so-called academic subjects This program calls for teachers with imagination and initiative and willingness to work. It is a part of the vocational guidance program — the life adjustment program. Most industrial arts work probably is too shallow, too stultified, too much on the exercise basis with not enough time given to it, too few experiences, and too much shop work on an artificial or amateurish basis; not enough like the real thing. Projects built on the factory plan of production basis create a real interest in industrial arts shops.

Vocational schools must recognize a need for more training for jobs which up to now have generally been classified as semi-skilled trades or service jobs, not as skilled trades.

For the past year or more, on-the-job training programs for veterans have been an experience! More than 20,000 employers in Massachusetts are teaching their trade or craft or occupation on-the-job to about 45,000 veterans, with varying degrees of success. Thousands of training outlines on file for on-the-job training are a veritable gold mine for vocational counselors. Such training programs as piano tuning, commercial baking, floral designing, auto body repairing, candy-making, cloth cutter in the tailoring trade, oil burner servicing, commercial photography, refrigeration repair, tuneup and ignition specialist, caretaker and maintenance man are courses offered. Many of these occupations, and dozens more, can be taught in short courses. Vocational education's aim is to prepare for profitable employment. Why not consider the establishment of one- or two-year courses, probably in the latter part of the secondary school program, to give vocational training in many of these fields? This would be an opportunity school plan, making courses available in the upper

(Continued on page 40)

As a service to our readers we present this round-up of new equipment, materials, and catalogs of interest to vocational educators. For further information write to the AMERICAN VOCATIONAL JOURNAL, 220 E. 42nd St., New York 17, N. Y.

Allied Radio Corporation has a new 1947 catalog containing a listing of radio and electronic parts and equipment for laboratory and shop. A large 164-page publication, it is one of the most complete catalog of its kind,

with special emphasis on books, materials, training kits, test instruments, parts, and equipment required by schools and educational institutions with radio and electronics training courses.

Safety

(Continued from page 11)

Build or Remodel, calls attention to safe design in homes.

Safe design of houses is not enough. Students should also learn how to select and place furnishings and equipment so that the home provides a setting for safe living.

The ideas about safety and safe practices, developed in different classes, can be organized around everyday problems when students are taking their work in home management. Suggestions for safety teaching through home management can be found in publications of the National Safety Council called *The Haunted House, Safer Home Living*, and *Mr. and Mrs.*

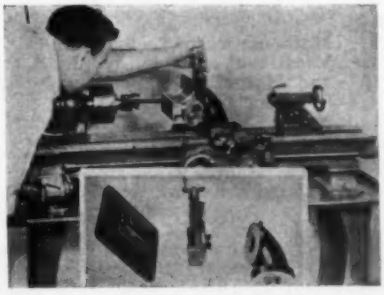
There isn't time to teach safety along with the professional training of teachers, but the alternative is to work with college teachers so that the prospective teachers have adequate preparation in this area. Until students come with the necessary information and desirable attitudes about safety education, along with the correct habits of work, it is necessary to weigh the importance of safety against each of the other aspects of the professional curriculum.

Only when each teacher examines the area of home economics for which she is responsible can home safety education become effective.

The Kodak Combination Funnel is a new plastic combination funnel which provides the photographer with three sizes of funnels. Made in two sections, the larger of which has an intake diameter of five inches and a spout two inches in diameter, and the smaller of which has an intake diameter slightly greater than two inches and a half-inch spout, the two halves fit together by friction and are ideal for work with large volumes of liquid that are to be poured into small-mouthed bottles.

Potter Instrument Co. now has available a high resolution photoelectric actuator for counting pills, buttons, watch screws, bottle caps, hardware, and other such items. The Model 600 Photoelectric Actuator has a beam approximately 1/16" wide and will respond to changes in light level as small as 20 per cent.

Qualified Gage Co. has a new adaptor by which precision boring and milling can now be performed on practically any small machine lathe. The "Shop Hand," as the adaptor is known, provides for both vertical and horizontal movement of the work. An "L" (one of the two parts of the adaptor) mounts on the cross slide in place of the compound. The compound, which has been removed from the cross slide, attaches to the opposite



end of the "L" in a vertical position. A face plate (second part of the adaptor) attaches to the compound holding the part to be machined.

L & R Manufacturing Co. is now building a general purpose universal motor. The unit is rated 1/10 h.p. at 5,000 RPM, AC-DC, and features a spindle with ⅜" shaft extending in both directions and double shielded ball bearings that never require oiling. Outside diameter of the motor is 3¼ inches.

When writing advertisers please mention *American Vocational Journal*.

Good Food and Nutrition for Young People and Their Families, by Edna P. Amidon, Dorothy E. Bradbury, and Vivian V. Drenckhahn. John Wiley & Sons, Inc., New York, N. Y.

This book presents material relative to good nutrition from a broad point of view and in terms of helping young people and their families to better understand the importance of good nutrition, and to utilize the principles which will affect practices in marketing, cooking, gardening, and preserving foods. It also points out how attitudes, habits, and prejudices as well as emotions, affect eating. Pertinent suggestions for definite activities are included.

Family life situations as represented by experiences of the Bradshaws, Martins, Proctors, and Varicks, help to give realistic pictures of the important points of good nutrition, both for families and individuals.

There would be a wide variety of uses for a book of this type in an integrated school program, and with groups of various ages such as young couples or others interested in making a general rather than an intensive study of nutrition. Teachers of nutrition for groups of less than college grade often encounter a lack of interest on the part of students, due to the technical information which is sometimes studied, through detailed reports of outcomes of research projects rather than the relation of good nutrition to everyday living. This book makes more usable and interesting the fundamentals of good nutrition, with application to healthy living.—*Gladys Love Rowe, State Supervisor, Home Economics Education, Michigan.*

Mathematics for Technical and Vocational Schools, by Slade and Margolis. John Wiley & Sons, Inc., New York, N. Y.

This book was published originally in 1922. The third edition is available and the third printing is dated 1946. It is well indexed and drawings of the application problems are small but clear and attractive.

The first 14 chapters are given to the basic processes of arithmetic, algebra, geometry, and trigonometry with practice problems also in pure mathematics. The remainder of the book is devoted to instruction and problems devoted to strength of materials, woodworking problems, and machine shop problems.

Tables consist of (1) powers, roots, circumferences, and areas; (2) logarithms of numbers; (3) sines and cosines natural; (4) tangents and cotangents natural; (5) secants and cosecants natural; (6) weights of materials; (7) American standard coarse-thread series; (8) American standard fine-thread series; (9) metric conversion tables; and (10) decimal and metric equivalents of fractions of an inch.

The instructional level of this book is suitable for trade schools, apprentice instruction, and trade extension instruction if the proper instructional guides are prepared by the teachers.

The book is best adapted to situations where thorough and basic understanding of mathematics is desired. It gives an indication of what the technical application might be for the various problems rather than to instruct in the operation of mathematical applications in specific cases without much consideration to the deeper understanding as to why such mathematical procedures are used.—*R. L. Welch, State Supervisor, Trade and Industrial Education, Wisconsin.*

Plastic Craft, by Ernest S. DeWick and John H. Cooper. Macmillan Co., New York, N. Y.

Plastic Craft is an important and necessary textbook for students in science, industrial arts, and fine arts. The authors have combined their knowledge and experience in preparing projects and working drawings for use of plastic materials in the industrial arts, science, and art departments in public schools and liberal arts colleges. The book was developed and tested in a series of professional improvement classes which were sponsored by the vocational division of the New Jersey Department of Education. These courses were offered to industrial arts instructors in various sections of New Jersey and were conducted by the authors so that industrial arts teachers could be properly informed about the use of plastics in making industrial arts projects. Plastics was found to be suitable teaching material.

The book is divided into three sections.

Part One describes the composition and use of seven common plastics, good and poor design, color etching, tempera painting, and using oil paints on plastics.

Part Two deals with the construction of projects and presents the following operations: Plastic stock layouts, sawing, filing, drilling and tapping, sanding, turning, grooving, routing and shaping, planing, cleaning, ashing, polishing and buffing, cementing, heating, bending, embossing, engraving and carving, forming, fastening devices, joints, pressure methods, inlaying, jobs and fixtures, dipdyeing, and the construction of a heat cabinet.

Part Three presents the projects which can be made with plastics. Complete information and clear directions are written in non-technical language for the construction of more than 75 projects, such as lamps, vases, desk sets, bracelets, book-ends, trays, picture frames, candle holders, cigarette, jewel and powder boxes, bowls, etc.

Plastic Craft clearly outlines the processes necessary for teaching plastic craft and the projects illustrated are graded and suitable for junior and senior high school students. This book will answer for the instructor all questions concerning craftwork in relation to plastics. It is an admirable book for teaching craft in adult education and rehabilitation courses. It will be of great help to the layman interested in making beautiful articles for home and personal use.—*Robert A. Campbell, State Supervisor of Industrial Education, New Jersey.*

The Party Table, by Margaret Powers. The Manual Arts Press, Peoria, Ill.

Decorating the table for a party is an initiation into the kind of craftwork that comes closest to bringing the joys of childhood back to the grown-up world. The book, *The Party Table,* offers suggestions for the easy way to party magic. It provides help which makes it possible to enjoy making the things before the party begins.

Everyone interested in parties is looking for ideas for crafts that are inexpensive and easy to do. The book gives ideas for successful parties. Of special interest are the directions and pictures for making table coverings—materials to use, patterns and methods for place mats and runners, and craft suggestions for the decoration of fabrics.

Other suggestions include directions for candles and candle holders, new ideas for place cards, favors, and center pieces, as well as patterns and descriptions for making dolls and figurines.

One section shows tricks to do with paper so you can turn the simplest party into an interlude of magic. The makings of the party and party background are included, together with state flowers, signs of the Zodiac, anniversary lore, etc. —*Lela O'Toole, State Supervisor of Home Economics Education, Oklahoma.*

General Shop Metal Work, by Dragoo and Reed. McKnight & McKnight, Bloomington, Ill.

The general plan is to present a group of projects and to follow this with a number of technical and related units which describe, in detail, the methods and techniques to be used. A wide variety of metal working activities is represented including sheet metal, ornamental iron, bench metal, casting, and art metal work. Several interesting and practical projects are illustrated and described. Full directions for the construction of each project are included and frequent references are made to the technical units which follow each set of projects. There are, in total, about 28 projects covering all of the fields represented, and about 40 technical units.

There are more than 70 line drawings of projects, operations, and equipment in addition to the 40 or more half-tone illustrations. The text, while concise, is clear and the student should have little difficulty in following the procedures in the construction of the various projects.

For those who are acquainted with previous editions of this book, it should be noted that this edition includes considerable new material, especially in the fields of acetylene and arc welding.

It may be assumed that this book will have two principal applications: (1) as a text in a very elementary course in general metal work or for the metals unit of a comprehensive general shop, or (2) as a reference and source book for which purpose it might well find a place in any shop library or planning center.—*Gordon O. Wilber, Director, State Teachers College, Oswego, N. Y.*

Recent Wiley Books in Vocational Education

► *Trade and Industry* ◄

MATHEMATICS
For Technical and Vocational Schools

By SAMUEL SLADE *and* LOUIS MARGOLIS

The third edition of a widely used and popular textbook—revised and brought up to date. Gives the student a practical working textbook on mathematics. Contains a large number of illustrative examples, problems, and easy-to-use tables.

Third Edition 1946 532 Pages $2.50

FUNDAMENTALS OF AUTOMOTIVE MECHANICS

By JAMES V. FROST

This book in its original form was used in automotive shop classes for the training of boys about to be inducted into the service. It gave them a thorough grounding in the fundamentals of construction and operation of all motor vehicles. The author has rewritten one chapter and redirected the objective of the book to meet more closely the needs of peacetime classes.

1946 545 Pages $2.80

AIRCRAFT CARBURETION

By ROBERT H. THORNER

Offers the information necessary for a thorough understanding of the principles, flight operation, and testing procedures of aircraft carburetors. Contains many illustrative diagrams, charts, graphs and photographs.

1946 393 Pages $3.50

► *Home Economics* ◄

YOUR CARRIAGE, MADAM!

By JANET LANE

Tells how the everyday motions of sitting, walking or stooping can be made so that the muscles, getting the proper exercise, are kept flat and the figure lithe and graceful.

Second Edition 1947 160 Pages $2.50

GOOD FOOD AND NUTRITION
For Young People and Their Families

By EDNA P. AMIDON, DOROTHY E. BRADBURY, *and* VIVIAN V. DRENCKHAHN

Explains the application of the principles of nutrition to everyday life.

1946 323 Pages $1.96

HOME AND FAMILY LIFE EDUCATION IN ELEMENTARY SCHOOLS

By ELIZABETH STEVENSON

Especially written to assist teachers in their increasing responsibility to educate for democratic living—with particular emphasis on the contribution of Home Economics.

1946 299 Pages $2.75

ELEMENTS OF FOODS AND NUTRITION

By MARY T. DOWD *and* ALBERTA DENT

Revised and enlarged second edition of this practical introductory nutrition textbook. Includes recent developments, and is thoroughly reorganized in accordance with modern educational thinking.

Second Edition 1945 357 Pages $2.25

PERSONAL PROBLEMS OF THE HIGH SCHOOL GIRL

By FRANCES S. MILLER *and* HELEN H. LAITEM

Sections on health, grooming, social contacts, family relationships, career planning, leisure-time activities, child care, budgeting.

Second Edition 1945 433 Pages $2.50

► *Vocational Agriculture* ◄

VEGETABLE PRODUCTION AND MARKETING

By PAUL WORK

An authoritative practical book that gives the student the necessary theory of vegetable growing, and emphasizes the practical aspects of vegetable production.

1945 559 Pages $2.75

Copies obtainable on approval

JOHN WILEY & SONS, INC.

440 Fourth Avenue, New York 16, N. Y.

How to Write for Television, by Doug Allan. E. P. Dutton & Co., New York, N. Y.

How to Write for Television stands up well even for those of us who already are engaged in the field of television as a business. The book has been designed primarily for those who do not yet know what television is all about. Allan supplies the answer rather simply but effectively by means of a panoramic rather than an encyclopedic approach. Because of this, even the most technical references, those dealing with phases of video script writing, are easily understandable.

The reader is taken behind the scenes of actual telecasting, and is placed in a position where he may observe all the many synchronized complications which make television click. Television's modus operandi is outlined with sufficient clarity to induce an almost first-hand experience. The effect of such fine writing style is to stimulate the reader into an even greater curiosity concerning this newly-established medium of sound, sight, and motion. There is a discursive quality of style very much in evidence throughout the book. It may be argued, of course, that the numerous asides and excursions presented by the author are, in fact, pertinent to the whole problem of writing, and make their contributions to this field. True. But the author has accomplished much more than mere contributory remarks on a very technical subject. He has done much more than merely present information and instruction on video writing. He has created a milestone in this communication art, his book being the first to make the entire field of telecasting intelligible for popular consumption.

Authoritative, objective, and readable, the book is recommended not only to writers who want to learn about this new medium and what it demands, but also to those who feel they would like to "browse around" in this industry. It presents much in the way of opportunities, actual and to come, in the field of television.—*William H. Atkins, Major Network Feature Program Writer and Secretary-Treasurer, The Guidance and Personnel Association of New Jersey.*

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Speed your work on wood, metal, glass, plastics, leather with this professional all-purpose tool. More exclusive features than any other tool on the market. Long life, powerful 20,000 RPM motor in unbreakable plastic case, oilless bearings, air-cooled. Exclusive built-in finger grip for perfect control in fine detail work. Weighs only 12½ oz. Fully guaranteed. Complete with 20 precision-made accessories in fitted chest. Hobby or professional work is easier with this whole shop full of tools in one. Do hundreds of jobs by simply changing the versatile accessories.
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Practical Parliamentary Procedure, by Rose Marie Cruzan. McKnight & McKnight, Bloomington, Ill.

A large number of students entering high school are deplorably weak in the skills and techniques of correct parliamentary procedure. This is equally true of the membership of social, political, religious, civic, and other organizations.

This book, written by a registered parliamentarian of Indiana who has years of experience in this field, was designed to meet student needs as well as to serve as a guide and reference in conducting business meetings.

Chart I, dealing with ranking motions, and Chart II, dealing with incidental motions, answer questions (at a glance) as to whether the motion requires a second, is debatable, amendable, requires a vote, and can be reconsidered.

In addition to answering parliamentary procedure questions the book gives assistance on such items as the order of business, how to organize a new club, election of officers, duties of the various officers, how to organize a convention, how to incorporate, set up a constitution and by-laws, etc.

The book is so well organized that reference to the table of contents and charts provide answers to questions readily. Future Farmer Chapters, 4-H Clubs, high school classes, and other organizations will find it a valuable book in a field not over-supplied with good guide and reference material.—*Luke H. Kelly, State FFA Advisor and State Supervisor of Agricultural Education, Michigan.*

How to Build an Occupational Information Library, by John R. Yale, Science Research Associates, Chicago, Ill.

This useful text is a revised guidebook for the occupational filing plan of Science Research Associates, first published in 1944. It includes changes and additions based upon two years of experience. The result is a practical tool for doing an important job as easily as possible.

Although essentially a guide to the SRA occupational information filing plan, the author is generous in his treatment of related topics and other filing systems. Major sections are devoted to (1) the need and purpose of collecting occupational information; (2) a comprehensive treatment of the SRA plan; (3) sources of free and inexpensive material; (4) a discussion of other types of material not to be included in the file such as audio-visual aids; (5) a presentation of the SRA Army Vocational Information Kit; and (6) a survey of other selected filing systems. A bibliography of source material is included.

More than 50 per cent of the text is devoted to reproduction of occupational classifications. Whether this is worthwhile can be judged only in the light of the needs of individual school situations.

The underlying theme is the use of occupational information for counseling in relation to the selection of occupational goals. This is one of the major uses, and one of education's major responsibilities. At the same time and for other valid reasons, the dissemination of occupational information is a major task also of the curriculum. Recognition at least of this point of view and suggestions for its implementation would add to the workability and completeness of the text.

For the school that is planning to extend its service, or one that is to begin its initial development, this book is an invaluable guide to the librarian, the counselor, the teacher, and the administrator.—*Harold J. Mahoney, State Supervisor of Guidance, Connecticut.*

Automotive Mechanics, by William H. Crouse. McGraw-Hill Book Co., Inc., New York, N. Y.

The automobile instructor rarely can find practically all of the material necessary for a basic course in one volume. It has been the practice for the instructor to have at hand a number of reference manuals, factory service instructions, and specification books and then formulate a course with review and test questions to determine the student's progress.

Automotive Mechanics embodies practically all of these features in one volume. An instructor can take any section of this book and develop a short unit course, complete in itself, with visual aids from the reference tables in the book, and then use the accompanying tests for check.

The approach to service work is the mechanic's approach and this lifts the book out of the category of the usual automotive books. The text material lends itself readily for the making of individual job sheets and by furnishing procedures in the correct order enables an instructor to set up a progressive course to follow a definite outline.

It has been difficult for the average vocational student to become interested in the trade related work. The approach to the related science and electrical theory for the automotive trade is well done and interesting. This portion of the trade, so necessary for a good background, has been neglected in many texts or has been overstressed to the extent that it is dull for the average student. Not so, however, in *Automotive Mechanics.* It is well tied in with practical applications.

Automotive Mechanics and its predecessor, *Automotive Electricity,* are two of the best books of their kind for students and instructors of automotive mechanics. —*Charles N. Turner, Chairman, Automobile Area, Bullard-Havens Technical School, Bridgeport, Conn.*

Inside the Vacuum Tube, by John F. Rider. John F. Rider, Publisher, Inc., New York, N. Y.

This publication should make a decided impression upon persons responsible for selection of text matter combining unbiased fundamental facts and good visual training. The student of electronics will find the volume a good substitute in lieu of class lecture and laboratory demonstration in obtaining a concise background for an intense study of the increasingly important subject of electron behavior. The addition of three-dimensional bi-color study plates, or so-called anaglyphs, add general initial interest, better mental conception, and visual relaxation after long periods of reading or study cause interest to wane. There should be more such plates in all technical volumes.

Special commendations are due for the author's arrangement and presentation of subjects under Chapters 1, 2, 4, 5, 9, 10, 13, and 15. The explanation of formation of matter and transformation of matter is excellent. This is an essential subject that must be understood before one can hope to conceive or appreciate the expanse of the father of all science-electricity.

The few recommendations that I would make would be as follows: (1) To make Chapter 2 a study of electro-statics with emphasis on its application to vacuum tubes; (2) Chapter three should then be electron emission, and Chapter 4 and all other chapters could follow in order. Upon the first mention in the publication of an envelope or enclosure surrounding the electronic odes, I would insert sufficient pictorial; preferably bi-color steriopticans, of the Geissler, Crooks, and other early experimental tubes with subtitle descriptions of the physical facts these experiments proved. This definitely will give the student a conception of the evolution of tube design. Each time a discourse presents facts concerning a type of modern tube, this tube should be pictorially represented to the best advantage using a representative unit.

A more detailed subject index would be a decided improvement.

The example set by the author in giving new ideas for technical text construction with better means for student interest and in this particular volume his assistance in dispelling the old conception of direction of electrical current motion in circuits, causes me to extend my compliments on a refreshing and valuable publication.—*A. M. Rome, Department Head, Electrical Department, Memphis Vocational School, Memphis, Tenn.*

Merchandising Guide, by M. David Potter. The Ronald Press Co., New York, N. Y.

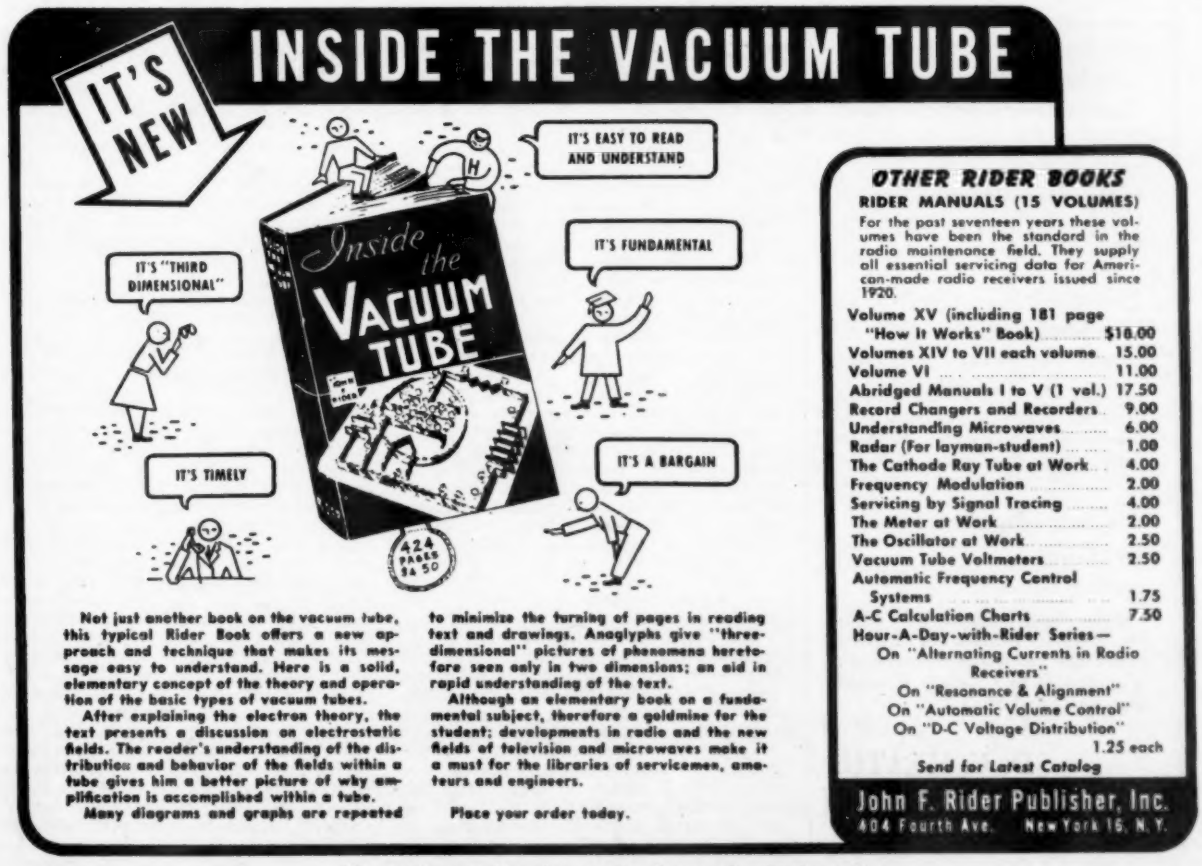
This book which is in its third printing is an exceptional treatise on basic principles of retail merchandising, which "points up" the figure work dealing with problems encountered by the buyer, merchandise man, or a small retail owner of a business. It stresses the need that the merchandiser has for knowing the retail method. It emphasizes the need for familiarity with the effect of markdowns on original markup and gross margin. All too often management depends on the determination of the financial status of the business at the end of the fiscal period. Through using this guide, control is of such a character that facts relating to the progress of the business are available on a day to day basis.

Phases of merchandising control that are admirably presented are the initial markup, averaging markups, retail method of inventory, turnover, merchandise planning, stock sales ratios, control of purchases, open-to-buy, markdowns, gross margin, merchandise control, price lines, miscellaneous problems.

The *Merchandising Guide* has a definite place in a related store math course in certain programs in the field of merchandising.—*C. A. Nolan, State Supervisor of Distributive Education, Delaware.*

It's Your Home, by Dora S. Lewis, Anna K. Banks, Marie Banks, Gertrude Borgeson, and Gladys Peckham. The Macmillan Co., New York, N. Y.

In its 175 pages, this student guide to homemaking outlines learning experiences for units on understanding people, making yourself attractive, your meals and you, making your home more livable, and you and your money. The style is bright, direct, and readable; the suggestions are well adapted to the developmental needs of adolescents. The five authors, by training and experience, are well fitted to suggest these activities for students. Even a teacher who is not interested in a workbook for her individual students can find in this volume many helpful ideas for improving her own teaching assignments.—*Letitia Walsh, Head, Home Economics Education, University of Illinois.*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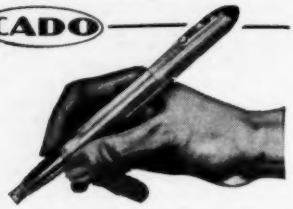

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The Production and Properties of Plastics, by S. Leon Kaye, International Textbook Co., Scranton, Pa.

This book is an intensive, concise, practical reference volume written by an industrialist. It should enjoy wide popularity not only with the manufacturers of plastics but with progressive colleges, technical institutes, and vocational-technical schools. It readily lends itself to use as a basic text in an orientation course in plastics, or as a supplementary reference in a chemistry testing laboratory, or a specialized course in industrial processes-materials of industry.

It is much more than an introduction to a growing industry; it is a comprehensive study of plastics and their application to modern industrial practices. The book reviews briefly the history of plastics, cautions against over-optimism and the misapplication of plastics. It divides roughly into three major divisions: The manufacture of the basic materials, the application of various plastics to modern industry, and the manufacturing techniques and design. Careful study provides much needed occupational information, not only in this specialized field, but in the closely related fields of chemistry, design, and production.

The wealth of illustrations from leading plastic manufacturers and fabricators supplemented with process charts, and molecular diagrams add much to the text. The glossary and list of trade names will contribute to the vocabulary of the technical student. It is a source book of value to anyone who is interested in the present techniques and future of this growing industry.—*Ernest O. Kohl, Jr., Special Assistant to the Principal, Edward Bok Vocational-Technical School, Philadelphia, Pa.*

Practical Electrical Mathematics, by William Edward Rasch. D. C. Heath & Co., Boston, Mass.

The specific uses of this book are well presented in the author's preface in which he states that the content is based on a complete analysis of the electrical workers trade and that in preparing the material he has used the suggestions of advisory committees. The mathematical approach is entirely functional. Problems in pure mathemtics have been omitted. The learner who does not have the background of training in mathematics will not get remedial assistance from this source.

Technical content in electrical theory is given for practically each set of problems. To the average student, apprentice, or trade extension trainee these discussions relating to the fundamentals of physics will be most valuable.

The appendix contains the following tables: (1) electrical symbols, (2) circle formulas, (3) resistance of soft or annealed copper wire, (4) safe carrying capacities of copper wires, (5) wire sizes required for motor wiring, and (6) power reactive factors.

The author has indicated eight excellent suggestions to the student as to how to proceed in the study of the book and the teacher should base his study guide on these suggestions. It represents instruction in mathematics as applied to the electrical trades alone, and is on the educational level demanded not only in the electrical trades in larger cities but by electrical workers in the smaller cities and in rural electrification training as well.

It is an excellent text for trade school students, apprentices, and journeymen. The teacher must know electricity as well as mathematics.—*R. L. Welch, State Supervisor, Trade and Industrial Education, Wisconsin.*

An Introduction to Drafting, by Stanely Pawalek. D. C. Heath & Co., Boston, Mass.

This book embodies a unique approach to the study of drafting. The procedure employed is based on the psychologically sound premise that an understanding of the elements of drawing should precede the development of line technique. Pencils, a ruler, and plain paper are the materials.

The book is intended for beginners, but the simple language and direct approach will appeal to adult classes in sketching and blueprint reading, as well as junior high school industrial arts groups. Included are those aspects of drafting that everyone should know. Fundamental principles are soundly developed as a basis for further study in which drawing instruments can be utilized.

In the introductory chapter, following a discussion of the importance and meaning of drawing in everyday life, students are given an opportunity to communicate with each other by means of drawing simple objects. A developmental approach is used with the material presented so as to motivate and facilitate class discusisons.

Students begin drawing the four basic types of lines—horizontal, vertical, slanting, and curved. In various combinations, culminating in "picture drawings" with a simple and logical transition from oblique to isometric to perspective. This is somewhat at variance with the traditional method of exposing the beginner to orthographic projection, but is the natural approach because the student's first efforts are spent in drawing objects as he sees them in everyday life.

Having mastered an understanding of simple pictorial representations, the student is introduced to "view drawings." An entire chapter is devoted to a series of problems which require the students to draw the missing lines and develop both picture and view drawings from the data given. Lettering is introduced with ample provision for practice. The technique of dimensioning is presented simply with examples and opportunity for application.

This completes the basic elements presented in the book, but an important and interesting feature is the remaining two chapters. The first asks, "What Do You Know About Drafting?" It clinches the concepts and understandings which the author has endeavored to develop. The last chapter, "Would You Like to Be a Draftsman?" discusses the employment opportunities.

The book is profusely illustrated with pencil drawings (359), sketches are employed to describe pictorially each of the major points, and the problems can be augmented by the instructor who uses models and other aids in his teaching.

More attention might have been given to an application of the principles of sectioning and auxiliary views, although the author undoubtedly presumes that this would come in later courses. A further minor criticism relates to the drawing of curved lines wherein the approach is not as complete as that employed in introducing other basic lines.—*William J. Micheels, Associate Professor, Industrial Education, University of Minnesota.*

Mechanical Drawing Problems, by Berg and Kronquist. The Manual Arts Press, Peoria, Ill.

The book provides a good source of drawing problems, especially on machine drawing and sheet metal developments. Quoting the authors, "The aim of the book is to provide a course of study for beginners" on the secondary level.

Many of the drawings problems are too typical of those which have been used and revised for years. They seem to have lost what freshness and appeal they may have had. Beginning students, of course, may not realize this, but the instructor may find it difficult to get enthusiastic about the same old problems.

The book, however, has served well since its appearance in 1918 and will continue to serve well those who prefer the traditional type of mechanical drawing book. Revised in 1922, 1927, and finally in 1946, it has not been revised enough in the opinion of this reviewer.—*Delmar W. Olson, Instructor, Industrial Education Department, Kent State University, Ohio.*

Principles of Tool Engineering, by Raymond R. Bloom. McGraw-Hill Book Co., Inc., New York, N. Y.

Primarily planned to furnish students in tool engineering with a background in interchangeable manufacturing, this text is also adapted, by the use of problems and questions, to suit the needs of vocational or technical high school students and trade extension classes.

While not all of the principles involved in tool engineering are covered, the major problems encountered are described in simple language. There are chapters on the basic machine tools, emphasizing the method of holding the work to be machined by the use of tools, fixtures, jigs, and gages, and showing their application to manufacturing.

Some of the outstanding features are the application of ready-made jigs; the principle of applying wear allowance and the gage maker's tolerance to various types of gages; and the list of visual aids to supplement the text material.

The book is well illustrated with basic machine tools, types of gages, and the application of welding symbols.—*C. E. Highlen, Principal, Vocational Schools, Atlantic City, N. J.*

Heating and Air Conditioning, by John R. Allen, James Herbert Walker, and John William James. McGraw-Hill Book Co., Inc., New York, N. Y.

Heating and Air Conditioning by Allen and Walker has long been a standard text in colleges of engineering and technical schools. It appears now in revised edition with John W. James, formerly technical secretary, American Society of Heating and Ventilating Engineers, as a third coauthor.

The authors' revision has been broad as well as thorough. They have incorporated new sections on panel heating, reversed-cycle refrigeration systems (the heat pump), and odor-removal apparatus. They have also included the latest technical data in their chapters on Fuels and Boiler, Gravity Warm Furnace Heating, and Residential Air Conditioning. Making use of the results of new research and practice, they give an extensive treatment of the hot water heating and forced-circulation systems. Finally they present the subject of psychrometrics simply but effectively in the text and incorporate its more technical aspects in the appendix.

The chapter on the design of an actual air conditioning system is of distinct pedagogical value. Beginning with the survey of a hypothetical system and proceeding through the selection of equipment and controls, the reader is given a thorough over-all picture of an air conditioning job. Alternate solutions are offered when they are indicated by the problem.

The book is well edited, the illustrations numerous and up-to-date. Practically every chapter ends with a select bibliography and some pertinent problems.—*George B. Rodenheiser, Assistant Director, The David Ranken, Jr., School of Mechanical Trades, St. Louis, Mo.*

Raising Turkeys, Ducks, Geese, and Game Birds, by Morley M. Jull. McGraw-Hill Book Co., Inc., New York, N. Y.

Eight of the 12 chapters are devoted to turkeys, one chapter to ducks, one chapter to geese, one chapter to game birds, and one chapter to guineas, pigeons, and peafowl. Rapid strides in turkey breeding in the past 20 years warrant this new book. Special attention is given to the latest advances in the subject.

This book is a companion book to *Successful Poultry Management* by the same author and publisher. It is a practical book, well written. Specific suggestions are made on how to secure better results and higher income.—*Carsie Hammonds, Teacher Trainer, Agricultural Education, University of Kentucky.*

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Elementary Radio Servicing, by William R. Wellman. D. Van Nostrand Co., Inc., New York, N. Y.

This book is especially adapted for use in vocational school radio courses, but is also well suited for industrial arts radio activities and beginning students or workers in the radio field.

The primary aim is to assist the student in developing logical, orderly procedure, and to aid him in acquiring familiarity with the steps necessary in isolating, diagnosing, locating, and clearing troubles.

All types of radio servicing are presented so that students can proceed step by step and with the least difficulty master each operation. Related information is closely integrated with each job. All major topics are accompanied by job sheets which list the aims, related information, and procedure involved for each job. Each chapter is followed with summary questions and a reference list. Pictorial diagrams and schematic drawings do an outstanding job.

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Up until the present time, books were either too technical or contained too much mathematics. Wellman has eliminated all mathematics and most of the technical, and comes forth with a practical, usable radio textbook that is recommended by this reviewer without reserve.—*Charles H. Dilks, Supervisor of Industrial Education, Wilmington, Delaware.*

Home and Family Life Education in Elementary Schools, by E. Stevenson. John Wiley & Sons, Inc., New York, N. Y.

The book is divided into two parts. The first presents an over-all view of the problems concerning home and family life in elementary schools. In general, these four chapters are vague and hard to read, but the third chapter gives a good understanding of the development of children at different age levels.

The reader does not get a clear, concise picture of how to develop such a program but the material has proved helpful in home economics classes.

Part two is more definite and describes experiences that have been carried on in various schools. Pictures show a variety of possible activities and bibliographies at the end of each chapter help.

The book shows how homemaking needs to function in the daily living of elementary children.—*Arline J. Pinkham, Supervisor, New York State Education Department.*

Careers in Personnel Work, by D. M. Smythe. E. P. Dutton & Co., Inc., New York, N. Y.

Personnel work is a relatively new area of specialization, both in the industrial and education field. This book is timely and well presented.

The author has made a comprehensive, interesting, and vital approach to the field of personnel work as a career. It will be most interesting to the student (both high school and college) to review the many examples showing background and preparation as well as pictures of men and women who have achieved success. The employee in an industrial plant will find the book readable and challenging as it points the way, step by step, to success.

There are no ready-made jobs for the person who may "know all about it" because of his college or university preparation, but it is rather certain that a period of training "in the ranks" will await the individual who is to become the successful personnel worker.

Mr. Smythe has clearly pointed out what personnel work is and what it does and what it takes to qualify. Comparison is made with the type of personnel work that had been developed in education on the high school and college level. Many problems and procedures are comparable.

Since personnel work is developing rapidly in education, a broader description of it might have been included.

The need in education for personnel workers, especially on the secondary level, will be increased in the future as the provisions of the George-Barden Act are put into effect. For the first time, vocational guidance has been provided for by national legislation. Undoubtedly the demands of industrial trained personnel workers will increase also.—*B. Howard Peake, Director of Guidance and Research, Vermont State Department of Education.*

Aircraft Drafting, by Hyman H. Katz. The Macmillan Co., New York, N. Y.

The rapid expansion of the avition industry has emphasized the need for properly qualified draftsmen. Those responsible for the training programs in this field have felt the need for a thorough and comprehensive text. Such is this volume, containing information ranging from nomenclature to lofting and design.

At the outset the beginner is introduced to a background of aeronautical information. He then proceeds to the fundamentals of drafting. Abundant illustrations (some in three colors) are given, clarifying every law of orthographic projection. After shape description, the author deals with size description giving detailed information on dimensioning as applied to aircraft drafting.

The chapter on pictorial drawing covers the principles of isometric, oblique, and perspective projection. The author explains each step from "rough layout" to rendering the finished drawing using either instruments or freehand. Many of the illustrations are reproductions of actual sketches showing "the how" of exploded and assembly drawings.

Production changes, the properties and characteristics of materials, processes and the machines used in fabricating aircraft parts, the use of various fastening devices, and standard parts are all given consideration. The use of dash numbers, almost universally used in aircraft drawing, is explained and illustrated. In a

similar manner, the place of the bill of materials is presented in a comprehensive manner. The engineering application of this text is well illustrated in a chapter on weight calculation. It includes formulas, tables, weight-saving suggestions, and short cuts.

In the final chapters the student is introduced to the subjects of lofting and design. Basic design elements, layout details, tolerances, flange sizes, bend and relief radii, springs, riveting, bolts, and other topics are given detailed consideration. The text contains many useful reference tables and charts. Each basic area developed by the author has ample problems to give practical training in the fundamentals of aviation drafting.—*O. A. Hankammer, Head, Industrial and Vocational Education, Kansas State Teachers College.*

Principles of Trade and Industrial Teaching, by R. W. Selvidge and Verne C. Fryklund. The Manual Arts Press, Peoria, Ill.

The first edition of this work was translated into the Russian language and later was used as a text for training instructors in the Army, Navy, and Air Forces of the U. S. during World War II. Many of the changes in the present revision may be credited to the critical and intensive use given the publication by the Armed Services, particularly by the staff of teacher trainers in the Armored Force School at Fort Knox, Ky.

The new edition merits high rank for its clear, non-technical, and concise descriptions of what a teacher must be, must be able to do, and must know. Potential and beginning teachers, teachers in service, as well as supervisors and administrators concerned with the improvement of instruction may find this text of continuing value. It is particularly well adapted to work on the undergraduate level, and flexible enough to admit of use in graduate courses and in independent study.

The first two chapters concern teaching and the teacher's status, with attention given to recognized success factors. The following seven chapters consider methods of selecting and organizing subject matter and practical teaching techniques. The need for planning and the value of analysis as an aid in planning is stressed. The next eight chapters discuss findings in psychology which apply directly to the teaching process—they are not a substitute for intensive study of this specialty in appropriate courses, but do serve to emphasize and review understandings essential to good teaching. The two concluding chapters concern reading comprehension and measurement and would seem to benefit from placement earlier in the volume.

Changes appear throughout the revision and one new chapter, "Directing Learning," has been added. It discusses integration, emphasizing its occurrence as an internal process rather than an external arrangement. Few statistics appear in the text, but eight figures are distributed among three chapters to illustrate useful arrangements of learning materials, the nature of the learning process, and the basis for belief in individual differences.

Each chapter contains a succinct summary statement, followed in ten instances by an observation problem. Chapters also contain a list of questions chosen particularly for their value in class discussions and conclude with lists of references, 60 per cent published since 1930, 20 per cent since 1940.

Withal, it is a fitting legacy from the senior author and a constant source of encouragement to those in search of practical guidance to increase the effectiveness of their instruction.—*John M. Brophy, Assistant Professor, Industrial Education, New York State School of Industrial and Labor Relations.*

Electric Motor Repair, by Robert Rosenberg. Murray Hill Books, Inc., New York, N. Y.

Mr. Rosenberg's book will appeal to those who are interested in the fundamental operations involved in electric motor repair.

It goes directly to the problem of repairing motors and presents the information in a usable form. The book covers AC and DC motors and controllers, including a brief account of the electronic control and is specific in the data involved. It is written especially for trainees who are going into the field of motor repair and reconditioning and presents an ideal basis for trouble analysis.

The unique plan of the book makes it possible to have the illustrations adjacent to the printed information, thus saving time and making reference to drawings and charts very easy while checking the steps in disassembly and assembly of electrical motors.

Of all the books on this subject which have come to our attention, it is the writer's opinion and also that of the electical department at Wilbur Wright, that Mr. Rosenberg's *Electric Motor Repair* is among the very best.—*O. F. Carpenter, Principal, Wilbur Wright Vocational High School, Detroit, Mich.*

Shopwork on the Farm, by M. M. Jones, McGraw-Hill Book Co., Inc., New York, N. Y.

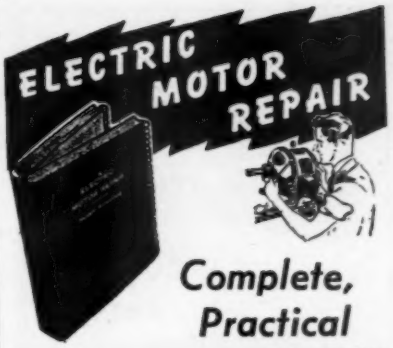
Methods of using tools and performing operations are exceedingly well illustrated. The book is written simply enough for high school boys in vocational agriculture, though it may be used by college students. It emphasizes the correct methods together with reasons why. It deals with: Providing and equipping a farm shop, sketching and drawing, woodwork and farm carpentry, painting and finishing and window glazing, sharpening and fitting hand tools, rope work, harness and belt work, concreting, soldering and sheet-metal work, cold-metal work, forging and welding, simple plumbing, and repairing machinery.—*Carsie Hammonds, Teacher Trainer, Agricultural Education, University of Kentucky.*

As Others Like You, by Margaret Stephenson and Ruth Millett. McKnight & McKnight, Bloomington, Ill.

This attractive, easy to read etiquette book of 80 pages is definitely written for young people.

In the introduction the authors express the philosophy that "the way to be liked is to learn thoughtfulness of others—a graciousness or true courtesy acquired by trying always to put the other person at ease, and to create a warm friendly atmosphere wherever you go."

The authors have a broad background of experience and contacts with young people, and show a knowledge of their social problems in the catchy chapter



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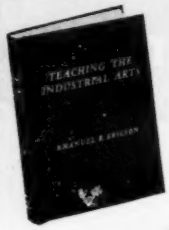

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(Write for descriptive list of 22 books on careers and occupations)

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headings: Living with Others, Meeting People, Accepting with Pleasure, When Mealtime Comes, Dating, etc.

The discussion of each problem is definite, practical, and in keeping with the philosophy expressed in the introduction.

Young people, as well as anyone interested in becoming socially acceptable, would find this little book helpful. The clever illustrations add interest and zest. —*Margaret Browder, State Supervisor, Home Economics Education, Tennessee.*

Teaching the Industrial Arts, by E. E. Ericson. The Manual Arts Press, Peoria, Ill.

This book contains a clear, comprehensive presentation of the activities of an industrial arts teacher. It was written for the purpose of encouraging teachers in service, and those who are in preparation for teaching, to recognize and analyze the many problems and opportunities that confront them as teachers, and to offer suggestions that will lead to a more effective and satisfying career.

The author presents information about industrial arts education and general school procedure that every teacher should know. He does not limit the content of the book to methods, techniques, organization, analysis, etc., but very carefully and effectively brings in important suggestions concerning the industrial arts teacher's personal relationship with the school authorities, the other teachers, and the pupils. He also makes suggestions for a teacher's personal relationship with the local people with whom he comes in contact, which if followed, will help him to gain and maintain a happy and respectable position in the community.

Along with the comprehensive treatment of the various aspects of industrial arts education and the teacher's place in the school and the community, the author has included a fine bibliography of the better books and magazine articles pertaining to the teaching of industrial arts.

This book should prove to be an invaluable asset to all industrial arts teachers and especially to young men and women who are training for the profession.—*Arthur F. Ahr, Supervisor of Industrial Arts, The State Educational Department, New York.*

Your Career in Advertising, by Don Rivers. E. P. Dutton & Co., Inc., New York, N. Y.

Do you think you would like a career in advertising? Are you acquainted with all the different job opportunities in this field? Would you like to know what educational and training opportunities are available? Do you wonder if you have what it takes? Do you think it would be a glamorous occupation?

One seeking the answers to these questions would do well to read *Your Career in Advertising.* A counselor or teacher whose duty it is to assist students with occupational plans would find it helpful. This is a book packed with vital information concerning the vast field of advertising. The author makes it clear that if one is looking for an easy, glamorous job he should enter some other field. Or if one does not possess native ability and personality traits adequate to meet the demands he should not anticipate a career in advertising.

According to the author, one must be smart and have a "flair for stringing words together attractively." He must be curious, having a more than usual interest in a great variety of things. His imagination must be fertile. He must be ambitious.

Careers in all phases of advertising are clearly explained so far as what the worker does, preparation needed, salary which may be expected, and promotional opportunities. Much space is given to explaining how would-be advertising workers can get started. There are chapters on "The Printed Word," "The Spoken Word," "Art and Layout," and "Market and Media." Attention is given to such media as newspapers, magazines, mail order catalogs, posters, billboards, radio, and television. One chapter is entitled, "It's a Woman's World," and shows how a woman with the right qualities can find a career in this field. The final chapter, "A Roman Holiday Ahead," anticipates that advertising will be expanded greatly for it has a part to play in the economic order in the immediate future. Here he points out that care must be exercised to make advertising reliable.

The book cover states that Don Rivers is a copywriter for Compton Advertising, Inc., New York. He began his career in advertising while in college, working part-time for a newspaper in Minneapolis. His first job was with Knox Reeves Advertising Agency in Minneapolis. The introduction is written by Reginald M. Cleveland, industrial advertising manager, New York Times, who calls the book an excellent blueprint to a career in these fields.—*Dolph Camp, State Supervisor, Occupational Information and Guidance, Arkansas.*

How to Establish and Operate a Retail Store, by O. Preston Robinson and Kenneth B. Hass. Prentice-Hall, Inc., New York, N. Y.

Lack of knowledge concerning store operation is the the greatest single cause of business failure. Some of these failures can be prevented by self-study, vocational courses in retail practices, or both, combined with practical and meaningful work experience. To provide the subject matter for aspiring retailers or distributive education students, the authors have written this book. It discloses the various areas of retail organization that must be mastered in order to become a successful merchant. Starting with an introductory chapter on opportunities in retailing, subsequent units are devoted to a variety of sales, merchandising, and management subjects. Included are chapters on locating, financing, and organizing a small store; setting up a record system; buying and merchandising; personnel administration; sales promotion; techniques of selling; concluding with a directive on the need and importance of human relations in business.

Careful study and practice of the principles outlined should prevent many failures in retailing that are due to lack of understanding of store operation. Those who aspire to small store ownership, those who wish to advance in the field of retail leadership, and small merchants all could profit from this study of fundamental retail structure and techniques of profitable operation.—*Kemp Hoff, State Teacher Trainer, Distributive Education, Georgia.*

Training High School Youth for Employment, by C. E. Rakestraw. American Technical Society, Chicago, Ill.

The book deals with that phase of education known as the cooperative diver-

sified occupations. For the past decade this plan for education has commanded nation-wide attention as one which unites the home, school and industry; and provides training for real life adjustment on a secondary school level.

Mr. Rakestraw has been a pioneer and a leader in this field of training. It was he who presided at the first conference attended by prominent vocational educators for the purpose of formulating policies and developing plans to promote this type of program. During the years following this initial meeting, he conducted numerous conferences throughout the southern region to further the study and growth of this field of training. The policies and standards presented in his book are the outgrowth of these conferences; they have been approved by state supervisors and tested by actual practice.

The author presents not only the principles, standards, and philosophy of education from which the cooperative diversified occupations program stems, but also indicates detailed accounts of practical value in the organization, coordination, and administration of the program. Clearly stated is the importance of understanding the program; clearly stated are the procedures for incorporating the program in the state plan and the factors which determine its efficient operation.

The author includes a frank discussion of possible problems with suggestions for meeting these problems; emphasizes the qualifications, duties, and responsibilities of a coordinator; sets up criteria for the selection of students and for the evaluation of occupations; presents an exhaustive treatment of related subject material; includes a discourse on club work and pertinent labor laws. In fact, it contains the information needed to establish and conduct a successful cooperative diversified occupations program.

The book is simply written, well organized, and illustrated with actual photographs of the program in action. It contains copies of usable forms and charts.

State supervisors, teacher trainers, school administrators, progressive educators as well as coordinators, will find in this text a comprehensive and accurate description of the program.—*Mrs. Neva S. Wallace, Specialist, Instructional Material, Department of Trade and Industrial Education, University, Alabama.*

Study Guides: Carpentry, Machine Shop Work, Mechanical Drafting, Parts I and II. American Technical Society, Chicago, Ill.

When a question reaches national proportions, Wisconsin vocational people usually do something about it. This time the result has become evident in the form of a series of 12 study guides, the last of which have now been completed. These study guides present an outline of a course of study not only giving a sequence of assignments in one text, but also tie the basic text or texts to related materials.

Recognition is made of the value of short units which can be completed without too great a lapse of time, thus stimulating the student by creating the feeling of accomplishment. Each assignment consists of reference to a number of pages to be studied and a self-check test to be completed by the student. The self-check tests are composed of the objective type questions, true-false, and completion. Answers are provided for the self-check tests so that the student may not only determine his attainment but be provided with information concerning the points which need additional attention.

Each study guide includes a number of comprehensive examinations placed at the back which may be removed by the teacher for completion without use of the text, and graded by the teacher.

The production of these study guides marks another step forward in the techniques of teaching. The American Technical Society is to be congratulated and the gratitude of the vocational teachers of the nation is due the Stout Institute summer session group which made this material possible.—*Claude H. Ewing, Supervisor of Curriculum, Washburne Trade School, Chicago, Ill.*

Student Study Guide in Store Organization and Management, and Student Study Guide in Retail Salesmanship. American Technical Society, Chicago, Ill.

The title pages ascribe the authorship to the Wisconsin Schools of Vocational and Adult Education with the cooperation of the Wisconsin State Board of Vocational and Adult Education. Actually, the preparation of the script was directed by T. S. Rees, director of vocational education in Racine. The material was prepared by selected personnel from Wisconsin schools of vocational and adult education. Roy Fairbrother, state supervisor of distributive education, and R. L. Welch, state supervisor of trade and industrial education, are others who aided in this project.

The need for work of this kind was occasioned by the emphasis placed on on-the-job training after the war period. It was felt that there should be some method devised for aiding the student who has only periodic contact with the teacher, as well as for the student who has the benefit of a full-time teacher. These Study Guides make use of the basic texts, reference books, current literature, and visual aids which are available for retail salesmanship and store management.

The Guide is given the student for his own use and he is directed to read the assignments which are presented in the form of units. With each unit there are a number of student study questions to be used as an aid in looking for the important points in each lesson. The student then may test his knowledge with check test questions, also provided for each unit. These are objective type questions as opposed to the essay type found in the questions, used mainly to motivate reading. When the check test questions have been satisfactorily answered, the student may proceed to additional assignments and check test questions. After each section of three units, there are provided periodic examinations, which determine the degree to which the student has mastered the assignments.

The *Student Guide in Retail Salesmanship* uses as a basic text, *Successful Retail Salesmanship*, by Robinson and Robinson. The guide in *Store Organization and Management* is based entirely on *Retailing* by Norris A. Brisco.

For those who are acquainted with the excellence of the work produced by the Vocational and Adult Division of the Wisconsin State Board of Education, these two volumes offer no exception. The material is practical and up-to-date; the texts are set up in an attractive, functional manner, and they meet the requirements for which they were produced.—*Samuel W. Caplan, Chief, Distributive Education, Pennsylvania State Department of Public Instruction.*

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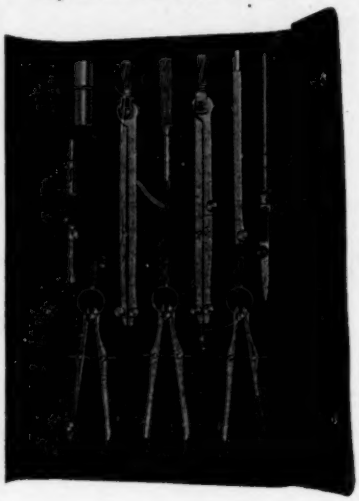

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General Shop Woodworking, by Verne C. Fryklund and Armand J. LaBerge. McKnight & McKnight, Bloomington, Ill.

"A dynamic society requires problem-solving abilities of those who would create as well as keep pace with change." So the authors state in the foreword to this remarkable synthesis of woodworking fundamentals. The aims as outlined in the foreword and developed throughout the 75 units of the book are drawn from the broader context of general education aims as well as from well-known industrial education aims. These are based upon the tenet that the development of individual initiative and planning ability are fundamental values. To this end the authors have made a three-lane approach: through a gamut of the basic operations; through units of important technical information; and through "related information topics of cultural nature."

The first 43 units are in the vein of "What you should be able to do," consisting of detailed and concise units ranging from the laying out and cutting of rough stock through the various finishing processes. The remaining units are in the vein of "What you should know," presenting technical and other related information giving to the book its well-rounded perspective which highly recommends it on general education qualities as well as a basic shop reference or text. Under this heading, attention is given to basic elements of drawing and planning, to some important points of consumer knowledge, to the origins and development of the more common materials, and to many other fields of interest having social and cultural significance.

The authors make an enumerated step presentation of the units with pertinent questions to emphasize the key points. Additional emphasis and strong interest appeal are achieved through very extensive use of illustrations. The vocabulary is challenging without becoming too difficult or too elementary for either junior or senior high school level. The material is readily adaptable to practically any instructional approach with more particular value perhaps to the beginning student interested in fundamentals and orientation. Naturally, for best results, the instructor should thoroughly familiarize himself with the content and make-up of the book and encourage the same in his students, in order that full value may be realized from its broad scope.—*Nile F. Hunt, Industrial Arts Department, High Point Public Schools, North Carolina.*

Careers in Social Service, by Evelyn Steele and H. K. Blatt. E. P. Dutton & Co., Inc., New York, N. Y.

In this book the authors have done a good job of preparing material that will be useful to students, counselors and others. It will be especially useful for students who have made some progress in working toward a career goal and have discovered an interest in social service work, and for counselors in familiarizing themselves with information about this field. From the acknowledgments, it is evident that a long list of agencies have given authoritative assistance in preparation of the book.

While the authors claim a general rather than a specific approach to the development of information about careers in social service, the contents reveal the inclusion of significant information from all the areas. They adequately set forth the need for professional social workers, the nature, goals, and aims of the work. Information contained includes activities, number and trend of workers, employers, qualification of the individual, education, salaries, etc. These areas seem to constitute a pattern which is followed in the description of work in the different social service areas: professional organizations, family case work, child welfare, school social work, probation and payroll, medical social work, group work, community organizations, public welfare field, social service research, social administration, social legislation, and related fields.

The last chapter appropriately is devoted to projecting needs of the future. The book contains a supplement supplying information about approved schools of social work and active organizations. An adequate bibliography is provided.—*R. D. Pulliam, State Supervisor, Occupational Infromation and Guidance, Georgia.*

General Shop Electricity, by A. W. Dragoo and Kenneth Dragoo. McKnight & McKnight, Bloomington, Ill.

This book should be considered as an elementary text particularly suitable for its exploratory or orientation value. The contents consist chiefly of 25 shop projects and 17 exercises supplemented by approximately 40 pages of information pertaining to electricity. The exercises represent the more commonplace run of bell hookups and simple lighting hookups using switches, receptacles, and porcelain sockets. The projects are mostly of the construction type representing well-selected practical problems, ranging in difficulty from a very simple magnetic compass to a four tube AC-DC radio receiver. The instruction for each project is clear, well-written, well-illustrated, and generally supplemented with interesting technical information.

Provision for teaching electrical work in industrial arts usually has been too narrow and frequently confined to bell wiring and elementary house wiring only. No real understanding and appreciation of electricity can be developed unless experience is provided with electrical phenomena in all its applications, its transmission, transformation, generation, and its use for heating, light, power, and communication. *General Shop Electricity* does introduce the learner to all these phases of the subject. Elementary projects and experiments are included. Considerable space is devoted to radio construction. This seems more than justified when it is realized that radio incorporates a wider variety of electrical phenomena and their various applications than any other single piece of electrical equipment.

One major objection to electrical work as taught in the past has been that a large portion of the time assigned to electrical work actually has been used in work other than that which is electrical. Some may be critical of many of the projects in the book for this reason. This would seem hardly to be as much a criticism of the book as of the teacher who uses it. *General Shop Electricity* may well prove exceedingly useful in other areas of the general shop as well as the electrical area. This manual should be examined by every general shop teacher for its possible use as reference or text in his own shop.—*Elroy Bollinger, Professor of Industrial Teacher Training, The University of the State of New York.*

Buying for Retail Stores, Rev., by John Wingate and Norris A. Briscoe. Prentice-Hall, Inc., New York, N. Y.

In six parts, ranging in length from three to seven chapters, the new edition discusses "The Buyer's Job and Organization for Buying," "What and How Much to Buy," "Where to Buy," "How to Buy," "Brands and Labeling," "Trade Relations."

Complete and detailed coverage of every phase of the buying process, which the authors aver is "one of the oldest of arts but the newest of sciences," has been included. Here we find impressive exposition of the scientific method as applied to an occupation which, until the 20th century was considered the suitable employment for those who "had neither the wit nor the opportunity to master a profession." Certainly no one who examines the Wingate-Briscoe volume can long continue in the belief that retailing is a field for the dull and poorly endowed.

In the chart on page 32, "The Valuation Given to the Various Qualifications of the Ideal Department Store Buyer," we see that leadership, analytical skill, the ability to cooperate with others, comprehension of figures, and the ability to interpret them rank above mere native shrewdness and bargaining ability or even the good taste and feel for merchandise that comprise the chief claim to a retail apprenticeship of more than a few recruits to the profession.

The well-balanced enumeration of the advantages and disadvantages of a buying career gives a realistic picture of the exciting and rewarding features of the work as well as its strains and pitfalls.

If, as the preface announces, "the purpose of this book is to serve as a text primarily for those who wish to consider buying as a career," we believe that the book is perhaps unnecessarily detailed, since for a mere consideration of a profession one need hardly master so thoroughly its technique. It might well be the text for a large store's executive training program and the inspiration for a dozen short term evening courses in the field of distributive education.—*Frances A. Kroll, Adult Distributive Education Teaching Staff, Connecticut State Department of Education.*

General Woodworking, by William H. Johnson and Louis V. Newkirk. The Macmillan Co., New York, N. Y.

This is another excellent school shop textbook by the well-known Chicago authors. In it they have included almost all phases of woodworking including hand woodworking, machine woodworking, carpentry, woodturning, wood carving, patternmaking, and the finishing of wood. An introductory chapter on the technology of wood is also included which makes the book desirable as a textbook for the earlier unit courses in woodworking. As a text for a comprehensive short-time general woodworking course the book is most valuable.

Especially commendable are the 218 excellent original drawings and retouched photographs which provide sufficient eye appeal to induce the reader to examine carefully the written descriptions. The extensive bibliographies of reference materials which conclude each chapter are also very useful. Drawings of more than 100 appropriate projects are included in the 218 figures so that the teacher may rely entirely on this book as a single source for information, manipulative processes, and projects. The beginning teacher will find it especially helpful.

The effort to condense the subject matter usually contained in separate books on hand woodworking, machine woodworking, wood turning, patternmaking, carpentry, and wood finishing necessarily limit the amount of detailed technical information included. The extended descriptions of procedures to be followed in making the projects included in the book might well have been replaced by more background information about tools and materials. The inclusion of completely detailed bills of material for all projects, in the opinion of this reviewer, deprives the student of an opportunity to work these out for himself. Need is also seen for more specific safety instruction in the use of tools, machines, and finishing materials.—*De Witt Hunt, Head, Department of Industrial Arts Education and Engineering Shopwork, Oklahoma A & M College.*

Course Making in Industrial Education, by John F. Friese. The Manual Arts Press, Peoria, Ill.

On the growing list of revised books in industrial education, the text by Friese is a welcome addition. Growing out of the author's early work in unifying and developing courses of study in industrial arts and vocational education, the volume has been used in correspondence instruction, in-service teacher training, and as a graduate and under-graduate text.

The book may be divided into two sections. The first, comprising 15 chapters, treats of course-making principles, techniques, and organization with considerable reference to related philosophy, methods of teaching, class organization, correlation, standards and testing, and curriculums in industrial education. The second section consists of five chapters containing extracts from courses of study selected by the author for their varying arrangement and general excellence.

The chapters on organization and management, correlation, and philosophy are enlarged. The latter chapter, particularly, has been extended to include beliefs which the author holds in the field of industrial education. These statements will be readily accepted by many, and will prove provocative to others. This reviewer hoped for further reference to phases of part-time and extension work in vocational industrial education.

Summary statements briefing the text highlights conclude each chapter. Following these statements are selected references whose publication dates range through four decades. These include many basic books in the field and others which, although more intimately associated with general education, are important.

On the whole the volume appears to be a practical tool for both new and experienced teachers, supervisors, and administrators. For those who are bewildered by the opposing contentions in the upper reaches of curriculum-making, and who are faced with the need for shaping and operating courses acceptable to a community and sound in concept, the text will have special value. In addition to serving as a convenient guide to course-making, it also heightens interest through a dozen chapters, in phases of industrial education which would benefit from further treatment and which stir scholarship.—*J. M. Brophy, Assistant Professor, Industrial Education, New York State School of Industrial and Labor Relations.*

4 Square Planning for Your Career, by S. A. Hamrin, Science Research Associates, Chicago, Ill.

The author urges the accepted formula of occupational planning to emphasize to teen-age youths the methods and importance of planning for one's life work. Emphasis is placed upon the need for securing reliable information about a wide range of one's strengths and weaknesses as a prelude to giving serious consideration to vocational planning.

Dr. Hamrin depicts the task of choosing and preparing for an occupational area by a square. The four sides are (1) one's abilities, (2) one's interests, (3) one's personality, and (4) the opportunities and requirements of occupations which are consonant with such abilities, interests, and personality. The concept of vocational maturity is employed in a manner which should have a sobering effect upon the boy or girl who read it.

4 Square Planning introduces the teen-age boy or girl to some of the common methods of occupational classification and suggests the significance of occupational distribution to the individual who would plan for occupational life. Little attention is given to earnings in specific occupations. The author has wisely left this information to more current sources.

The book is written in a vocabulary and style which youth will find stimulating and delightful. This reviewer believes that it meets an urgent need for a straight-forward discussion of the problems of vocational choice, so inadequately appreciated by youth.—*Glenn E. Smith, Director, Guidance Services, Missouri State Department of Education.*

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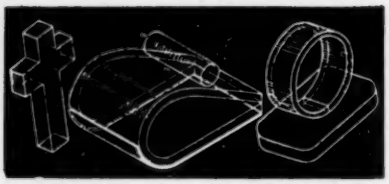

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60 Per Cent

(Continued from page 27)

years of high school for those in the 60 per cent group who, through an industrial arts program, perhaps, have become interested in doing some worthwhile work when they leave high school. They should be prepared for it. Many more of the 60 percent should be in the vocational school in the first place, and might be if more practical functional guidance was done. For the short courses, part-time teachers for special subjects may be needed. Possibly itinerant teachers would function where schools are within easy commuting distances. Every boy and girl who is not planning to attend college should possess at the end of his high school career, or when he leaves school, some skill which he can sell to an employer.

If these things can be done for veterans, why not for students in school? If it had been done, there would not be more than 50,000 veterans spending a year or two taking a course to fit them for employment when they could have been prepared in vocational schools and high schools before they entered Service.

Industrial arts and vocational education are not the whole answer. They cannot provide all the solutions for effectively serving this unserved 60 per cent group, but they do have a very definite and very valuable contribution to make. They must revise their thinking, expand the programs, and do some intensive planning to provide more vocational opportunities for a larger percentage of this group.

The Prosser resolution is challenging, particularly to this type of education. It was often expressed at the conference that "A *must* for the youth in this group would be an enriched industrial arts offering. It would be concerned with the materials, processes, and products of manufacturers and with the contribution of those engaged in industry as well as the selection, purchase, use, and repair of products of industry as commonly found about the farm and home. While such work would largely be manipulative in character, it would afford content of an informative, technical, and social kind, contributing to complete living because it meets needs that are real and satisfies impulses that are inherent."

Work experience that is part of the life adjustment program is needed. Just as soon as the desires, interests and abilities of the students have been discovered they should be given both in long and short courses specific vocational training upon which they may capitalize after school days are over.

The Prosser Resolution has succeeded in bringing together the general and vocational educators for a cooperative effort to reach a solution of this very real and important educational problem. All recognize that an excellent guidance and counseling and job information service is necessary if the program has any prospects of success. Both vocational and industrial arts education are vitally needed. Competition must be forgotten and all join forces in a coordinated and united effort to provide service for the interest of youth.

Who's Who

J. B. Rutledge, vocational agriculture instructor at Steele, has been appointed state supervisor of veterans education in Missouri.

E. R. Anderson has been appointed assistant surplus property agent in the California State Department of Education. He formerly was director of vocational education in North Sacramento, Cal.

M. D. Mobley, state director of vocational education for Georgia returns June 6 from Berlin, Germany, where he has been with the Military Government studying Germany's vocational education program.

John J. Farrar, has been appointed director of public relations and information for the national FFA. He previously was executive secretary of the Oklahoma FFA. Mr. Farrar succeeds William J. Huff who resigned to accept a position with *Country Gentleman.*

W. E. Lowry, executive director of the Texas State Board for Vocational Education, and Robert A. Manire, state director of vocational agriculture, were among the Texans who attended the Southern Regional Conference for Agricultural Workers in Birmingham, Alabama. Brice Cecil, teacher trainer for the State Board and Plasco G. Moore, state supervisor of distributive education, attended the national convention of the Associated Distributors Clubs of America, at Memphis, Tenn. and remained for the Regional Conference on Distributive Training called by the U. S. Office of Education.

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SURVEY FORMS for use in making local or area studies of graduates and former students of industrial, home economics, or agricultural education schools or departments; useful to occupational guidance, training, and placement programs. 1940. Pp. 4 ea. Prices: 10 copies, 15 cents; 100 copies, $1.05; 1,000 copies, $8.25.

Research Bulletin No. 2—A Study of Industrial Teacher Education at the Graduate Level. 1941. Pp. 42. Price, 10 cents each; 10 or more, 5 cents each.

An Enlarged Program of Vocational Education With Special Reference to Larger Administrative Units. 1943. Pp. 52. Price, 40 cents each; 10 or more, 35 cents each.

Improving Instruction in Industrial Arts 1946. Price, 25 cents each; 10 or more, 20 cents each.

State Supervision of Industrial Arts Education. 1946. Free.

America's Vocational Schools. 1945. Pp. 56. Prices: single copies, 20 cents each; 100 or more, 15 cents per copy; 1,000 or more, 13 cents per copy.

The Carry-Over Into Homes of the Teaching of Family Living to In-School and Out-of-School Youth. 1943. Pp. 17. Prices: 1 to 9 copies, 20 cents each; 10 to 99 copies, 15 cents each; 100 or more copies, 9 cents each.

Evaluative Criteria for Vocational Education in Agriculture. 1942. (Revised). Pp. 75. Prices: 20 cents each; 10 or more copies, 15 cents each.

Manual of Directions for Use with "Evaluative Criteria for Vocational Education in Agriculture, 1942 Revision." 1943. Pp. 15. Prices: 1 to 9 copies, 10 cents each; 10 to 99 copies, 9 cents each; 100 or more copies, 8 cents each.

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Red Cross

(Continued from page 9)

or the administrator to see that the job serves the objectives of the particular course of instruction of the shop in which the article is to be made. Red Cross officials are keenly aware that schools must have suitable and adequate instructional vehicles and they are interested in providing this type of project. They have sought and are continually seeking the advice and counsel of vocational and industrial arts teachers and administrators in selecting new projects and in revision and modification of existing designs.

Finished articles should be placed promptly in the hands of the American Junior Red Cross, each one properly marked with the identification marker of the local Red Cross Chapter and the school which made it. If articles are not picked up promptly, students suspect that the project was made-work, not something designed to serve a definite need.

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WHAT DO YOU THINK?

FOR many years there has been a real need for some system for obtaining certain types of instructional materials for related subjects in vocational education. Practically every state has done something to meet the situation. In some cases state legislatures have appropriated state funds earmarked for the purpose of preparing related instructional materials for training apprentices, for on-the-job training, or for other programs.

During the war, a step was taken in several sections of the country to provide improved instructional guides not only for a specific locality, but to make these materials available to all war training classes giving the same type of instruction. Through the leadership of the War Training service in the U.S. Office of Education, a plan for exchange of materials among the states was inaugurated.

Training of veterans, including the thousands enrolled in on-the-job training programs has, if anything, intensified this situation. There probably never has been a greater need for classification of the kinds of materials needed, and thoughtful consideration of content, based upon requirements which workers must meet on the job in both the "old" occupations and those we call "new" because of their recency. Unquestionably many of the on-the-job training programs which have been approved for veterans, will remain in the "regular" vocational curriculum after this phase in the service rendered by vocational education has been completed.

APPRENTICESHIP, on-the-job training, cooperative part-time training, and day-trade programs are reaching out to new areas in trade and industrial, distributive and office occupations, agriculture, and homemaking education as eager youth and adults demand training which will prepare them to earn a living. Hundreds of training outlines have been or are being developed for these new programs which are valuable guides to publishing houses that are in the business of bringing out vocational texts, as well as to educators who must set up new training courses.

The George-Barden Act makes it possible for states to spend Federal funds, matched by money from within the states, for research and investigation, and for planning and preparation of instructional materials. Unless leadership and direction is given to this phase of the expanding vocational program, there will be a great deal of duplication of time, effort, and money and the danger of state training agencies going into the publishing business, as each state sets about developing its vocational training services.

No new central agency is needed to do the planning or preparation of required instructional guides. Rather, the states need leadership and guidance to determine what is required, to analyze content, prepare outlines for courses of instruction, and some central clearing house for information. With such leadership, each state may make a maximum contribution, satisfying its own needs through its own efforts, and helping all other states which have similar needs. Confusion, duplication, and needless expense can be eliminated.

IT IS possible to plan a national cooperative effort with each state a working partner. Materials prepared must be adaptable to quick changes based upon the needs of the industries, businesses, agricultural enterprises, etc. Uniformity is important so that materials prepared in one state are equally understandable and usable in other localities, even though there may be colloqualisms and variations in method, etc. Agencies concerned with preparation of instructional material may be given factual information on unserved fields, and probable quantities required nationally, so that actual training needs can be met in every respect, simply and efficiently.

The United States Office of Education already has taken the initiative in providing such leadership in one phase of the vocational training program, and through the first exploratory venture has established a pattern. Working with several of the associations vitally concerned with vocational education for trade and industrial education a joint committee has been actively engaged with the project for several months. A public announcement of the results of their endeavors appears in this issue of the *American Vocational Journal*. This committee should have every encouragement, and the assistance of all state supervisors, teacher training and administrative staffs, in the continuation of their enterprise.

DOES this suggest other possible services which might be met similarly? Might not other fields of vocational education make use of the experiences and results of the work of this joint committee? It is an example of leadership and of service which can be offered to the states without in any way assuming the obligations and prerogatives of the states, when it is undertaken with the full cooperation and participation of the various associations of educators who are concerned.

One of the bug-a-boos of the Federally-aided program of vocational education has been the red herring of "Federal control." The service which has just been given the states through the work of the joint committee on instructional aids is an example of valuable assistance from the Federal office which certainly is above such a charge. The states well can use more than an auditing service from their national office of education. This has been one undertaking which has given leadership to state efforts, tended to eliminate costly duplication, and afforded helpful guidance. As the George-Barden Act opens new avenues of service, additional leadership of this kind can be salutary and should be available.

EACH branch of vocational education well may analyze its major needs, the areas which are not adequately served, and determine some similar plan of service which can be established for the benefit not only of those educators responsible for vocational education, but for the youth and adults whom this program was established to serve.

What do you think?

George H. Fern

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